COUNTY OF YORK, VIRGINIA INVITATION FOR BIDS (IFB)

Issue Date: October 15, 2004	IFB #: <u>1419</u>
Title: Sewer TV Inspection Van	
Classification Code: 89064	
Issuing Agency:	County of York, Virginia Central Purchasing 120 Alexander Hamilton Blvd P.O. Box 532 Yorktown, Virginia 23690
Using Agency And/Or Location Where Work Will Be Performed:	General Services Department Vehicle Maintenance Division 201 Operations Drive Yorktown, Virginia 23692
Sealed Bids Will Be Received Until 2: At Which Time They Shall Be Opened	00 P. M. on Monday, November 22, 2004. I In Public.
********FOUR (4) COPIES OF I	BID & ATTACHMENTS ARE REQUIRED******
All Inquiries For Information Should E Purchasing Office phone: (757) 890-36	Be Directed To: <u>Louise Stokes, CPPB</u> , <u>Buyer II, Central</u> 580.
SEND BIDS DIRECTLY TO THE ISS	SUING AGENCY SHOWN ABOVE.
-	or Bids And To All The Conditions Imposed Herein, The rnish The Materials Described At the Prices Indicated In Section
Name and Address of Firm:	Date:
	By: Signature in Ink Title:
	Print Name:
Telephone No.:	Federal Tax ID#:
Facsimile No.:	

IFB NO. <u>1419</u> Page 2 of 51

1.0 PURPOSE:

It is the express purpose of this formal Invitation For Bids (IFB) to purchase one (1) new 2005 Chevrolet CC5500 TV VAN for the purpose of videoing the interior of storm water and new construction sewer lines. The purchaser is County of York, Virginia (hereinafter "Owner") Department of Environmental and Development Services, Division of Utilities.

2.0 SPECIFICATIONS:

Specifications are provided by Utilities Division of Environmental and Developmental Services and the Vehicle Maintenance Division, Attn: Mark Bellamy, Fleet Manager, Department of General Services as described in General Specifications below.

F. O. B. Origin. A Certificate of Origin must accompany the vehicle at the time of pickup.

2.1 DESCRIPTION: New, never titled 2005 model Chevrolet CC5500, regular cab. Gross vehicle

weight rating (GVWR) to be not less than 19,500 lbs. Options and

specifications as outlined under Owner's Specifications.

2.2 QUANTITY: One (1)

3.0 GENERAL VEHICLE SPECIFICATIONS:

All components, unless otherwise required by these specifications, shall be the standard equipment specifically advertised and installed by the manufacturer for the model specified. The sole source of information in determining whether or not any equipment is specifically advertised for the vehicle being offered shall be the manufacturer's published literature.

4.0 OWNER'S SPECIFICATIONS:

4.1 Equipment package to include:

Equipment To Be Supplied: Multi Conductor TV Inspection System

TV HI QUBE 18' Gas COMPONENT LIST

1 TV High Cube Van, 8.1L V8 Gas (19,500 GVW) w/Automatic Transmission and 18' Loadspace

- 1 Aerocap w/Full Height Walkthru Roof Conversion, Bulkhead, and Hinged Passage Door
- 1 Cab Air Conditioner
- 1 12 Volt Light, Cab Area
- 1 AM/FM Radio
- 1 Chassis Manuals, Repair, Electrical, emissions
- 1 Electrical and as built drawings
- 2 Under Body Tool Boxes, Each rear corner

1 TV High Cube Van Equipment to include:

- 2 Amber Electronic Strobe Warning Beacons Roof Mount
- 2 Adjustable Floodlights Rear of Vehicle Area Illumination
- 1 Standard Drivers Seat with Seatbelt and Sunvisor
- 1 Standard Passenger Seat with Seatbelt and Sunvisor
- 1 12 Volt Light, Cab Area

IFB NO. <u>1419</u> Page 3 of 51

- 1 Back-Up Alarm
- 2 Arrow Stick Direction Guides mounted Front and Rear, LED Lights

1 Generator Power Package to include:

1 120 Volt 60 HZ 6000 Watt (Minimum) Commercial Grade Generator, Gasoline

Powered with Electric Start - Liquid Cooled Honda or Onan no substitutions

- 1 Generator Remote Start/Stop Cable Assembly
- 1 Generator Storage Compartment with a Lockable External Access Door
- 1 Generator Slide Out Rail Assembly for External Servicing
- 1 Commercial Power Supply Receptacle, 25' Cord and Plug
- 1 Electric Supply Center with Circuit Breaker Box, Commercial Power and Generator Power Connectors
- 1 Automatic Power Transfer Switch

1 System Engineering Panel, Power Distribution System Rack Mount to include:

- 1 Voltage Readout, Power Supply
- 1 Hertz Readout, Power Supply for 60Hz
- 1 Generator Hour Readout
- 1 Remote Generator Start/Stop Control Switch

1 TV Hi-Cube Van Control Room Interior to Include:

- 1 12,000 BTU Heat Pump Air Conditioner, side mounted inside control room
- 1 Lonseal Lonplate flooring
- 1 Kemlite Surface Wall and Ceiling Covering
- Bulkhead Wall with Passage Door From Control Room To Equipment Room
- 1 "Safety Plus Visual" viewing window located in bulkhead wall
- 1 Control Console with Rack Mount for Electronic Equipment
- 1 Corean Contoured desk top area
- 1 Controller housing in desk top (in angled, recessed housing)
- 2 110 Volt Indirect Fluorescent Light Fixtures
- 2 Electrical Outlet with Dual Receptacles
- 1 Fire Extinguisher with Bracket, 10 BC Rating
- 1 Operators Chair, swivel with casters
- 1 Side Entry Door with Fold out Steps
- 1 Closet / Cabinet
- 1 Padded Bench seat With Underneath Storage
- 1 500 Watt Wall Mounted Heater

1 TV Hi-Cube Van Equipment Room Interior to Include:

- 1 Lonseal Lonplate Flooring
- 1 Kemlite Surface Wall and Ceiling Covering
- 1 Insulated Tapered Roof
- 2 Electrical Outlet with Dual Receptacles
- 1 Downhole Pole Mounting Bracket Assembly
- 2 110 Volt Indirect Fluorescent Light Fixtures
- 1 Extended Workbench with Lonseal Lonplate covered worktop
- 1 Worktop covered with Lonseal Lonplate over TV reel
- 2 Upper Storage Cabinets
- 1 3-1/2" Vise Mounted on Worktop
- 1 Rear Access Electronics Service Access Door
- 1 110-Volt Fluorescent Light Fixture Mounted Above Workbench
- 1 30 Gallon Wash Down System with 12 Volt Water Pump
- 1 Retractable Hose Reel with 20' Water Hose and Nozzle

IFB NO. <u>1419</u> Page 4 of 51

- 1 1500 Watt wall mounted Heater
- 5 Drawer Tool Cabinet mounted under Work top

1 Rear Video Monitor 15"LCD to include:

- 1 Video Monitor 15", NTSC Color Standard
- 1 Cable Assembly Video Monitor to Monitor in control room
- 1 Monitor mount bracket

1 Custom Enclosed Lavatory to Include:

- 1 RV Type Toilet
- 1 Ventilation Fan. Roof Mounted
- 1 Stainless Steel Sink
- 1 Toilet Paper Dispenser
- 1 Towel Rack
- 1 Electrical Outlet Dual Receptacle, GFI
- 1 110 Volt Fluorescent Light Fixture
- 1 Lonseal Lonplate Industrial Vinyl Floor Covering
- 1 Laminated Surface Wall Covering
- 1 Kemlite Covered Ceiling
- 1 Passage Door from Lavatory to Equipment Room

1 Pan, Tilt, and Zoom Camera System to include:

- Solid State Color Sewer TV Camera with a Pan & Rotate Camera Head, 40:1 Zoom Ratio, 10x Optical Zoom, 4x Digital Zoom, NTSC Color Standard, 4x Light Integration
- 1 Duel Camera Controller
- 1 Camera Lighting System
- 1 Camera Transportation and Storage Case

1 Color TV Power Control Unit-Multi Conductor Rack Mount, NTSC Color Standard to include:

- 1 TV Camera Remote Optical Focus Control
- 1 TV Camera Automatic Iris Remote Control
- 1 TV Camera Lighthead Intensity Control w/Meter
- 1 Camera Test Cable Assembly

1 15" LCD Color Industrial TV Monitor, 450(min.) Line Resolution, NTSC Color Standard, Built-in Speaker

1 Video Cassette Recording System to include:

- 1 Rack Mount for VCR
- 1 Removable Video/Audio Tape Recorder, Industrial Cassette,
 - NTSC Color Standard, VHS Format Front Load
- 1 Audio Recording Microphone
- 1 2-Hour 1/2" Recording Tape Cassette
- 1 Cable Assembly VCR to Power Control Unit

1 Pipeline Data Collection & Real Time Video Capture System, Rack Mount, to include:

- 1 Genuine Intel Pentium IV 2.8E Hyper thread GHZ CPU
- 1 GB of DDR (Double Data Rate) SDRAM (Synchronous Dynamic Random Access Memory) DIMM, 266 MHz
- PCI Video Capture Board with MPEG1 Video Capture & Hardware Compression
- 1 Video Graphics Controller, 128 MB, 8X, AGP
- On Board Network Connection, Linksys Wireless Card (EDS to Configure)
- 1 Soundblaster Compatible, On Board Sound

IFB NO. 1419 Page 5 of 51

CD Recorder, CD-RW, DVD-ROM Drive 48x Internal

1 120GB 7,200 RPM EIDE Hard Drive

1 120GB 7,200 RPM EIDE A/V Removable Hard Drive

1 ATX-PFC 425 Watt Power Supply

1 19" Rack Mountable Video Character Generator & Titler

1 3 ½ inch 1.44 MB High Density FDD (Floppy Disk Drive)

1 Industrial Hardened Case with Air Filtering, Vibration Dampening Hard Drive Mounts,

Peripheral Cards Support Bar, 19" Rack

1 101 Key Enhanced Heavy Duty Keyboard

1 Optical PS/2 Mouse

1 SVGA Multimedia Monitor w/ Speakers 17"

Desk top Color Ink Jet Printer, 600x300 dpi, 512K

1 Windows XP Operating System

1 GRANITE XP Inspection Edition Version 1.0 Software

1 User Guide, Hard-copy

1 User Guide, CD

1 Quick Reference Card, Menu Shortcuts

1 Lateral Inspection Module

1 Manhole Assets Module

1 Hansen Two way Interface

1 Combination TV Transmission & Tow Cable Assembly to include:

1000' Gold-Multi Conductor Kevlar Fiber Armored Cable, .437" Diameter, 2000 lb. rating

1 Kevlar Armored Cable Terminal Connector

1 Y Eliminator Cable

1 12-Pin Dummy Protector Plug

1 Cable Strain Relief

2 12 to 5>4 adapter cables

1 Electric Motor Drive Television Cable Reel to include:

1 Power Level Wind & Multi-Ratio Electrical Transmission

1 Footage Meter with Local LCD and Remote Counter

1 Electronic Transmission Control at Viewing Station

1 Local Reel Mount Electrical & Mechanical Control

1 Sealed Continuous Contact Collector Assembly

1 Controller Cable Reel/Power Winch Motor

1 Self Propelled Camera Transporter, Wheel Driven, to Include:

Three sets of wheels to inspect 8" through 48" pipe to include minimum 3.8" diameter, intermediate 5.0" diameter, and maximum 10.5" diameter wheel sets

Two Speed Transmission to maximize torque in larger diameter pipe with manual shifter on camera carrier. The unit shall have forward, free wheel, and powered reverse capabilities

1 All six (6) wheel drive transporter assembly to include motor and enclosed drive train

1 Transporter Controller w/Automatic Safety Off

1 Electronic Remote Camera Lift

1 Tip-up rear 12 pin connector

1 Self-Propelled Camera Transporter "21" to include:

1 Transmission Coupling and weighted spacer set for 6"- 15" Pipe Sizes with Freewheel and Powered Reverse

1 Spare Parts Kit to include Additional Chain Links and Rubber Cleats

IFB#1419.doc/txtlou

http://www.yorkcounty.gov/purchasing

IFB NO. <u>1419</u> Page 6 of 51

- 1 Transporter Controller w/Automatic Safety Off
- 1 Equipment Retrieval Tool

1 Self Propelled Lateral Inspection / Evaluation System to include:

- Mini Mainline Inspection Camera, 1.50" Maximum Diameter x 3.5" Maximum Length Color Camera With Lighthead, 200 Degree Optical Pan Angle, 270 Degree Optical Rotate Angle, Built In Light Ring With Solid State White LED Lighting
- Mini Fixed Orientation Color Camera, 1.50" Maximum Diameter x 3.5" Maximum Length, Self Leveling, Built in Sonde Transmitter, Built In Light Ring With Solid State White LED Lightin
- 1 Lateral Launcher Assembly With Rotation / Extend / Retract Camera Positioning
- 1 Push Cable Drive Assembly Installed In Lateral Launcher
- Self Propelled Launcher Robot With Freewheel, Forward, and Power Reverse
- 1 Set of Weighted Adapters For Self Propelled Lateral Launcher Robot For 6" 30" Pipe
- 1 50 ft. Push Cable Assembly
- Electric Reel With Slipring and Clutch For Powered Retrieve of Push Cable / Control System To Include Launcher / Self Propelled Robot Control With Extend / Retract, Left / Right Rotation, Camera Selection and Picture In Picture Selection / Cable Drive Speed
- 1 Transporter Control With Forward, Freewheel, and Power Reverse / Variable Speed Control For Self Propelled Launcher Robot
- 1 Interconnect Cable For Launcher To Push Cable
- 1 Interconnect Cable For Control System To Power Control Unit
- 1 Set of Skids For Push / Inspection Camera
- 1 Spare Mini Camera, Self Leveling with Built-in Sonde
- 1 Spare 50 ft Push cable assembly

1 Bumper Mounted Crane

1 Prototek or Equal Battery Operated Sonde Locator, to Include:

FR-20 Receiver with Batteries

1 Cable Manhole Guide System to include:

- 1 TV Invert Pulley Assemblies
- 6 Quick Coupling Extension Poles
- 1 Manhole Adapter Hooks
- 1 Aluminum Manhole Top Roller Assembly

1 TV Inspection Accessories Package to include:

- 1 TV Maintenance Tool Kit in Metal Tool Box
- 3 Manual Operation, Instruction and Maintenance TV
- 1 TV Inspection Log Book
- 1 Manual Spare Parts, TV
- 1 Video Training Tape, TV Systems Operating Procedures
- 1 Video Training Tape, System Trouble Shooting Procedures
- 1 Video Training Tape, TV Cable Repair Procedures

IFB NO. <u>1419</u> Page 7 of 51

1 Combination Color Mini-Camera Control System/Monitor (120 volt/ 60 Hz NTSC) mounted in a Metal Cabinet to include:

- 1 9" Color Monitor with an Anti Glare Screen
- 1 Set Connecting Jacks for Video In and Video Out
- 1 Hand Command Controller for P/T and/or Transporter Operation
- 1 Diagnostic Display
- 1 Full Length Sun Shield Protective Cover
- 1 Printer Output Port
- 1 Auxiliary Monitor Output Port
- 1 Foot Pedal Control Port (For Transporter)

1 Data Display System, Installed in the Power Control Unit, to Include:

1 Pro Data Alpha Numeric Information Display, with Multi Paging and Defect

Coding (55 preprogrammed and 70 User definable defect codes minimum)

1 Remote "QWERTY" Keyboard for Data Entry

1 1000' TV Cable Assembly mounted in a Wheeled Dolly to include:

- 1 Electric Motor Rewind
- 1 Hand Crank
- 1 Automatic Levelwind
- 1 Electronic Footage Meter

1 Video Cassette Recording System to include:

- 1 Removable Video/Audio Tape Recorder, Industrial Cassette, Black and White or NTSC Color Standard, VHS Format - Front Load
- 1 Audio Recording Microphone
- 1 2-Hour 1/2" Recording Tape Cassette
- 1 Cable Assembly VCR to Power Control Unit

Each camera, camera transporter, and external lighthead to be supplied on this specification must be labeled and listed as a minimum by a Nationally Recognized Testing Laboratory (NRTL) to the applicable Standard for Safety for Closed Circuit Television Equipment, UL 2044, 2nd edition, 11/9/01. A listing report must be supplied that certifies the aforementioned equipment is acceptable as defined by 29 CFR 1910.399 and required by 29 CFR 1910.303(a). Self-certification or certification by a laboratory that is not an NRTL will be deemed unacceptable. NRTL labeled and listed equipment shall be supplied as required by the FEDOSHA memorandum, dated September 25, 2002, page 3, Section on Compliance, prepared by John L Henshaw, Assistant Secretary of Occupational Safety and Health.

1 Pan, Tilt, and Zoom Camera System to include:

- Solid State Color Sewer TV Camera with a Pan & Rotate Camera Head, 40:1 Zoom Ratio, 10x Optical Zoom, 4x Digital Zoom, NTSC Color Standard, 4x Light Integration
- 1 Camera Controller
- 1 Camera Lighting System
- 1 Camera Transportation and Storage Case

1 Self-Propelled Camera Transporter,"21" to include:

1 Transmission Coupling and weighted spacer set for 6"- 30" Pipe Sizes with Freewheel and Powered Reverse

Spare Parts Kit to include Additional Chain Links and Rubber Cleats

1 Dolly Mounting Bracket

IFB#1419.doc/txtlou

Page 8 of 51 IFB NO. 1419

CC5500 Chevrolet TV HI-CUBE VAN CHASSIS With Aero Cap full height walkthrough.

Engine Vortec 8100MD V8

225 Net Horsepower @ 3,600 RPM

350 lb.-ft @ 1,200 RPM

Exhaust System Stainless Steel content

Emission Control Systems Meets Government Standards

Cooling System Heavy Duty Wheelbase 195" Minimum **GVWR** 19,500 lb. Minimum Heavy Duty Springs Suspension

7000 lb. front minimum 13500 lb. rear minimum Heavy Duty Shock Absorbers

Rear Air Bag Load Levelers Manufactured by Granning

Brakes Power Disc - Front Power Disc - Rear

Parking Cable, Foot Operated

4 Wheel ABS 12 Volt System 105 AMP

Alternator

Electrical

2-650 CCA with isolator Battery Type

Fuel Tank Capacity 40 Gallons Steering **Power Steering**

Transmission Automatic, 4 Speed, Allison 1000, HD Electronic w/ Overdrive

Tires and Wheels 7 each (Dual Rear Wheels) one spare wheel and tire

LT 225/70R19.5F all season SBR BSW

Miscellaneous **Dual Intermittent Windshield Wipers**

Windshield Washers

Dual Heated Rear-View Mirrors, Externally mounted Directional Turn Signals LED rear Brake lights to be LED

Emergency Four-Way Flashers

Back-Up Alarm Paint - Bright White Cab Air Conditioning

AM/FM Radio

CC5500 TV HI-CUBE VAN BODY

Construction Aluminum Rear Doors Full Opening

Rear Bumper Full Width Steel Treadplate

Standard Lights including Stop/Turn, License Plate, Lighting

Back Up and ICC Running Lights. All rear stop, turn ,backup and all marker lights will be LED

IFB NO. <u>1419</u> Page 9 of 51

CC5500 TV HI-CUBE VAN BODY DIMENSIONS AND EQUIPMENT

Interior Height 82 Inches Minimum
Interior Width 90 Inches Minimum
Interior Loadspace 18 Foot Minimum

EXTERIOR

The vehicle shall include front and rear Arrow Stick Traffic Guides and amber strobe warning lights mounted on the roof. The on/off switch for the Arrow Sticks and beacons shall be located in the cab of the truck to give the operator the ability to turn them on before exiting the vehicle, thus enhancing the safety of the outside environment before they enter it. Beacon switches that are mounted in a location other that the cab of the truck shall be deemed unacceptable due to the inability to turn them on before exiting the vehicle.

Dual adjustable 12V halogen floodlights (work lights) shall be mounted inside of the vehicle box, at the rear header. The floodlight placement on the inside of the box allows the operator to safely adjust them while standing on the inside of the truck box facing rearward.

INTERIOR

The van interior shall be divided into two areas - an Operators Control Room and an Equipment/ Storage Room. A full width laminate covered bulkhead wall constructed with cabinet grade plywood with an operator pass through door will divide the two areas. The bulkhead wall will have a 3" aluminum kick plate (minimum 1/8" thick) attached at the base for protection from possible damage caused by impact.

Access to the truck cab from the viewing room shall be via a full height passage with a hinged door located in a dividing (bulkhead) wall.

VAN CONTROL ROOM

The Control Room shall be located at the front of the van body. A interior mounted 12,000 BTU Heat Pump air conditioner with a built in heater shall be supplied. All cabinets and hinged cabinet doors shall be constructed of 7ply cabinet grade plywood for durability. All cabinets will be mounted above the floor surface on ¼" nylon spacers to minimize any potential water damage from absorption of water during the wash down process. Edges of cabinet doors, bulkhead doors, door cutouts, and cabinets shall have 1/8" thick aluminum trim installed on them to provide maximum protection in areas that are susceptible to potential impact. A 3" aluminum kick plate (minimum 1/8" thick) will be installed at the base of all cabinets and walls to provide maximum protection against potential damage caused by impact or moisture. Cabinets not constructed with 7ply cabinet grade plywood shall be deemed unacceptable. All hinged cabinet doors will have a metal flush (recessed) mounted positive latch, eliminating the unwanted opening of doors during transit. Plastic door latches or surface mounted "barrel bolt" type latches shall be deemed unacceptable on any cabinet doors.

Cabinets installed directly on the floor surface without nylon spacers and cabinets constructed with particle/MDF board shall be deemed unacceptable due to the possibility of water damage. Cabinets installed with no protective aluminum trim for exposed surfaces and no 3 inch aluminum kick plate at the base shall be deemed unacceptable due to lack of protection from potential long term impact damage.

The Control Room floor shall be constructed of a ¾" cabinet grade plywood substrate with ¼" tall water relief channels attached to the bottom of the floor to prevent moisture from gathering under the floor, thus minimizing potential long term water damage. The plywood substrate shall be covered with Lonseal Lonplate Flooring. The Control Room walls and ceiling will be covered with a seamless Kemlite laminate. The Kemlite laminate on the walls and ceiling shall be void of IFB#1419.doc/txtlou http://www.yorkcounty.gov/purchasing

IFB NO. <u>1419</u> Page 10 of 51

any seams or exposed screws for easy cleaning. Laminate wall and ceiling covering that is not void of seams and screws will be deemed unacceptable due to the difficulty of cleaning.

A plywood control console shall be used for mounting all electronic components. The control console shall be designed to bring all controls within comfortable reach of the operator. The control console shall be positioned so the operator can see the Equipment Room area through a 30" X 30" (minimum) smoked Plexiglas window in the bulkhead wall. The control console shall be equipped with a 19" industrial rack mount for the electronic components. An ergonomic, recessed angled housing will be provided to house the Pan and Tilt Camera Controller, TV Reel Motor / Power Winch Controller, and the Self Propelled Camera Transporter Controller. The exact controllers furnished will be indicated on the component list. A 1" thick counter top constructed with 7ply cabinet grade plywood shall be provided. The counter top shall be covered (including the edge) with an industrial grade "standard" laminate (.062" thick) for durability.

A bench seat with a seamless vinyl cushion shall be supplied. Fabric covered cushions or vinyl covered cushions with seams shall be deemed unacceptable due to the inability to clean them thoroughly.

Two 48" 110 VAC indirect fluorescent lights shall be supplied for optimum lighting in the Control Room. Track lighting shall be deemed unacceptable due to the heat produced from the bulbs.

(2) Duplex interior electrical outlet shall be supplied in the Control Room.

Corean Counter top shall be supplied

EQUIPMENT/STORAGE ROOM

The Equipment/Storage Room will be located in the rear of the van. The floor shall be constructed of 2 X 6 pine planks and covered with a plywood sub-floor and Lonseal Lonplate flooring. Aluminum Diamond plate flooring shall be deemed unacceptable due to its poor wear characteristics and potential glare hazards from the sun. The sidewalls, rear doors, and ceiling shall be constructed of 3/8" plywood and covered with a protective washable Kemlite laminate. The Kemlite laminate on the walls and ceiling of the Equipment Room shall be void of any seams or exposed screws for easy cleaning. Laminate wall and ceiling covering that is not void of seams and screws will be deemed unacceptable due to the difficulty of cleaning.

There shall be a workbench with a plywood worktop covered with Lonseal Lonplate flooring material located on the passenger side (curbside) of the Equipment Room. There shall also be a plywood worktop covered with Lonseal Lonplate flooring material located above the reel on the driver's side (street-side) of the Equipment Room.

A 30-Gallon (minimum) Washdown System with a 12 VDC water pump shall be installed to maintain water pressure for wash down of all cameras, transporters and other related equipment. The washdown system will include a stainless steel sink with a gooseneck faucet located in the lavatory.

The electrical system shall be designed to fully meet the environmental, safety, and electrical requirements of the vehicle as specified. All electronics will be housed in a climate-controlled cabinet.

Two 48" 110 VAC indirect fluorescent lights shall be supplied for optimum lighting in the Equipment Room. A 12 VDC cargo bay light will also be installed on the Equipment Room. All Equipment Room electrical boxes, outlets, and wiring conduit will be UL approved for exterior use in a wet environment. One (1) duplex interior electrical outlet will be supplied in the Equipment Room area. No exposed wiring will be acceptable. All electrical wiring shall be in accordance with applicable electrical codes including NEC. An automatic transfer switch for Shore / Generator Power shall be installed and will be activated upon receipt of power with a minimum 40 second delay to protect all electronic components and assemblies.

Brackets shall be mounted on the passenger side rear door to hold all downhole poles, invert rollers and manhole adapter hooks when required.

IFB#1419.doc/txtlou

http://www.yorkcounty.gov/purchasing

IFB NO. <u>1419</u> Page 11 of 51

GASOLINE GENERATOR w/ELECTRIC START - 6000 WATT HONDA EV6010

The power source for the system will be a 6000-watt commercial grade alternating current gasoline powered generator consisting of the following (minimum):

Generator	Shall be mounted in an enclosed cabinet with a fire retardant liner, locking vented door with a recessed stainless steel lock, and spark free exhaust system.
	Shall be the product of a firm regularly engaged in the manufacture of gasoline powered
	generators.
	• Shall be designed for commercial mobile applications capable of handling the load of intermittent heavy-duty use for sewerline television inspection units.
	• Shall be capable of continuously producing 6000 watts of power (50.0 amps) at 120 volts AC while rotating at 3600 RPM without undue heating, wear or vibration.
	• Shall be furnished with vibration isolators and a heavy-duty industrial muffler to ensure quiet operation.
	• Dry weight: 216 lbs.
	 Diff weight. 210 los. Dimensions (LxWxH): 25.59" L x 19.09"W x 14.17" H
Engine	
Engine	• Shall be a 359cc twin-cylinder, liquid-cooled, electronic ignition, OHC four-stroke unit
	developing at least 12.2 hp.
	• Shall be designed to operate the generator at 60 cycles + or - 2 cps and shall be governor controlled to maintain these cycles under varying load conditions.
	• Shall be equipped with an electrical starting device for local and remote start/stop, electrical fuel pump and low oil pressure shutdown.
	Shall be equipped with an oil and temperature alert system to automatically shut off the
	engine to prevent damage when the oil level drops below the recommendation level.
	Ignition system: transistorized magneto
	• Fuel consumption: 0.84 gal/hr gasoline
Other	A 30-amp external shore power receptacle shall be provided.
	Shore power to generator switchover shall be accomplish through a UL approved
	automatic changeover switch with suitable time delay to avoid damaging power surges.
	• A 25 foot, 30 A shore power extension cable shall be supplied.
	11 25 1550, 55 11 5hote power entension tubic blank be supplied.

SYSTEM ENGINEERING PANEL

The engineering panel shall provide monitoring of the power supply to the system. The panel circuitry shall be assembled in a rack-mounted chassis for installation in a built in control console. The faceplate shall be heavy gauge aluminum finished with an industrial grade surface and shall have permanent labels designating the function of the various switches and controls. Provisions shall be made on the panel for the following items:

AC Volt Readout AC Frequency Readout (58-62 Hertz) Generator Remote Start/Stop Generator Run Time Readout IFB NO. <u>1419</u> Page 12 of 51

REAR VIEWING COLOR MONITOR 15" LCD Flat Screen

The rear-viewing monitor shall be a solid state, high quality industrial grade color unit meeting the following minimum specifications.

Standard NTSC
Horizontal Resolution 350 Lines
Interlace 2:1

Size 15" (diagonally)
Controls Brightness

Color Contrast

The monitor shall be securely mounted above the cable reel for viewing at the rear of the vehicle. The mounting position shall provide maximum protected from direct sunlight for enhanced viewing.

PAN, TILT, and OPTICAL ZOOM CAMERA

The unit shall be labeled and listed as a minimum by a Nationally Recognized Testing Laboratory (NRTL) to the applicable Standard for Safety for Closed Circuit Television Equipment, UL 2044, 2nd edition, 11/9/01. A listing report must be supplied that certifies the aforementioned equipment is acceptable as defined by 29 CFR 1910.399 and required by 29 CFR 1910.303(a). Self-certification or certification by a laboratory that is not an NRTL will be deemed unacceptable. NRTL labeled and listed equipment shall be supplied as required by the Federal Government Occupational Safety Hazard Administration (FEDOSHA) memorandum, dated September 25, 2002, page 3, Section on Compliance, prepared by John L Henshaw, Assistant Secretary of Occupational Safety and Health.

The Pan, Tilt, and Zoom Camera shall be designed for use in 6" diameter relined pipe and larger. The unit will be designed to provide close-up views of pipe walls during inspection including minute defects and voids. The unit will be color, shall operate optimally through a maximum of 4000' multi conductor or 2000' single conductor cable, and shall consist of the following (minimum):

Camera

- Chassis construction shall include 100% solid state circuitry designed to withstand shocks and vibration normally sustained while being pulled through a pipe.
- The camera module shall be an industrial model only. Repackaged consumer grade cameras (i.e. Camcorders) will be deemed unacceptable for use in a pipeline television inspection system.
- Operating temperature ranges of the camera shall be 0 degrees C to 50 degrees C. Cameras incorporating built in lighting systems that generate heat exceeding the operating temperature parameters listed by the base stock camera manufacturer will not be acceptable.
- The camera shall develop a true color and transmit a sharp image picture on the video bandwidths only. Picture transmission systems that require the use of R.F. suppressors and are subject to local transmitter interference shall not qualify as being equal.
- Full color video bandwidths shall be provided with no sacrifice of low frequency response. There shall be no visible streaking of the low frequency test bars when viewing a standard EIA Test Chart.
- Shall not exceed an overall length of 17.7", a head length of 6.6", and a camera barrel diameter of 3".

IFB NO. <u>1419</u> Page 13 of 51

Camera Optical & Digital Zoom	 Optical & digital zoom and zoom & focus speeds shall be selectable from the maintenance terminal. Remote control of pan, tilt, pan and tilt homing, optical zoom, manual focus, automatic focus, shutter speed, frame integration, manual iris, diagnostics and internal lights shall be provided. Optical Zoom Range: 10x Digital Zoom Range: 4x (40x with optical zoom) Total effective zoom ratio: 40:1 The lens shall be an automatic iris type with a manual override (controlled from the control console) to control the illumination range for an acceptable picture between 3 and 10,000 lux.
Pan and	• Full Pan (no load): 56 deg/sec, full pan in 5-7 seconds
Rotate Speeds	• Full Rotation (no load): 31 deg/sec, full rotation in 11-13 seconds
Camera Housing	 The camera mechanics and electronics shall be housed in a high strength, damage resistant, aluminum housing with a stainless steel tube. The rear portion of the camera shall not exceed 3 inches in diameter to allow for operation in skids and self-propelled units that are designed for 3-inch diameter cameras.
	• The housing shall be 1/8" minimum wall thickness. Housings with thinner stainless steel walls or aluminum walls that easily dent on impact will not be considered equal.
	The front of the camera head housing shall have a view port of optical grade sapphire.
	• The rear of the housing shall have a recessed bell to protect the indexed cable connector.
Mounting Fork	 The forward portion of the camera shall not exceed 4.5 inches in diameter and will include the mounting fork, camera head and lighting. The camera forks must be rounded or chamfered and be the same diameter as the forward portion of the camera to eliminate any sharp corners that can become caught on obstructions.
	 Camera forks that exceed the diameter of the camera housing that are subject to damage inside the pipe are not acceptable. The mounting fork will rotate 360 degrees with an optical viewing angle of 400 degrees and shall allow the camera head to pan mechanically 285 degrees with a pan viewing angle of 331 degrees.
Camera Lighting	 Shall be remotely controlled from the control console. Shall be integrated into the camera and include four 12W xenon lamps equaling 48 watts. Shall provide adequate lighting in pipe sizes from 6" - 72" in diameter. Cameras that require external mounted non-directional lighting for 36" through 72" pipe are not acceptable.
Camera Controller	 The mounting surface for the joystick, switches, and LED shall be angled for ease of operator use. RS-232 maintenance port shall be provided. The pushbuttons mounted on the controller's panel shall provide the following switch positions: Focus: Near and Far, Zoom: In and Out, Iris: Open and Close, Autofocus and Lamps, Shutter: Fast and Slow, Pan, Tilt, Focus and Zoom Home, and Diagnostics. Shall include a joystick mounted in the middle of the controller's front panel. The joystick shall have the ability to move the camera head in four directions: up, down, left, and right.

ELECTRICAL SPECIFICATIONS and CAMERA REQUIREMENTS:

Video Output	Multi-Conductor Version: 1 V, S/N 46dB or greater
K	• Single-Conductor Version: FM modulated 9.8mHz to 11.3mHz.
Integrated Lights	• 4 x 12W xenon lamps
	Power consumption: 48W max 12V
	• Illumination: 80 mscp (1000 lumens)
	Lamp life: 200 hours
	• Color temp: 3000°K
Image Pick-up Device	Interline transfer 1/4 inch CCD color
Picture Elements (pixels)	• Solid state ¹ / ₄ " diagonal pixels: 768 (H) x 494 (V) = 379,392 elements (NTSC)
Lens	• 10x Zoom f=4.2mm to 42mm (F1.8 to F2.9)
	• 4x (40x with optical zoom)
Digital Zoom	
Field of View	• 56° diagonal, 46° (H) wide, 4.6° (H) tele end
Resolution Lines	470 TV lines horizontal
Electronic Shutter	• ¼ s to 1/10,000 s, 20 steps
Minimum Illumination	• 3 lux @ F/1.4
	• Single-Conductor Version: 64V to 160V
Input Camera Voltage	Multi-Conductor Version: 20-72V from controller
Head Rotation	• Axial Rotation: 360°
	• Rotation Optical Viewing Angle: 400°
	• Lateral Pan: 285°
	• Pan Viewing Angle Range: 331°
	Operate in a 6" Relined Pipe
	• Rotational Diameter: 4½"
Internal Diagnostics	• Humidity sensor, CCD temperature, camera voltage, light head voltage, serial number identification, and operating hour meter. <i>Cameras without the aforementioned diagnostics will be deemed unacceptable</i> .
Working Pressure	• 50 PSI (minimum)
Operating Temperature	• 0° to 50°C
Compatible PCU's	Multi-conductor Version: 1208 Mainline PCU and Inspector General portable
	Single-Conductor Version: SC-2000 CCU
Compatible Cables	Multi-Conductor Version: Up to 4000'
	Single-Conductor Version: Up to 2000'

IFB NO. <u>1419</u> Page 15 of 51

Dimensions	•	Overall length: 17.7", Head length: 6.6", Body tube diameter: 3", Head rotatio diameter, $4\frac{1}{2}$ "
Weight	•	TBD

CAMERA POWER CONTROL UNIT - MULTI CONDUCTOR

The power control unit (PCU) shall provide all the necessary power and controls to operate and monitor the television inspection system. All circuits shall be of solid state design, assembled in a rack-mounted chassis for installation in a built in control console. The faceplate shall be heavy gauge aluminum finished with an industrial grade finish and shall have permanent labels designating the function or purpose of the various switches, readouts and controls. The PCU shall have a back plate for all cable connectors each separately indexed and locking, and labeled as to purpose. Each camera system shall be equipped with a test cable to allow for the direct by-pass of slip rings, TV cable and any applicable connectors for testing purposes.

POWER CONTROL UNIT MINIMUM TECHNICAL REQUIREMENTS

The power control unit (PCU) shall operate off of 120 volts AC current. The PCU shall contain a solid state lighthead power source whose input shall be through isolation, variable voltage transformer and whose output shall be from 0 volts to 120 volts DC. A light intensity adjustment control and DC volt readout shall be provided on the front panel. Input and output of both the camera and lighthead power shall be protected by circuit breakers with indicators to identify open circuits. Circuits shall be isolated to provide operator protection from electrical shock hazards.

POWER CONTROL UNIT REMOTE CAMERA ADJUSTMENT

The power control unit will be equipped with the following remote camera adjustments:

Focus Control

A two-pole switch spring loaded to off permits the operator to adjust the camera focus for changes in pipe diameter or different views of defect conditions. In the neutral position, the camera focus will be electronically locked.

Automatic Iris Control

This control allows the operator to override the camera's automatic light compensating circuitry-operating range in the event an excess of light or lack of light produces a poor picture response. With the proper adjustment, the operator can change the iris opening to compensate for the light level available thereby improving the picture response.

SYSTEMS REQUIRING MANUAL EXTERNAL CAMERA SETTINGS OR THE REMOVAL OF THE CAMERA FROM THE SEALED HOUSING IN THE FIELD TO MAKE THESE ADJUSTMENTS SHALL BE DEEMED NOT ACCEPTABLE.

COLOR INDUSTRIAL MONITOR - NTSC, PAL Auto Select, 15" LCD Flat Screen

The television-viewing monitor shall be a high quality, industrial grade color unit providing a minimum of 550 lines of horizontal resolution. All circuits shall be of a solid state design with the exception of the picture tube. The picture shall measure a minimum of 15" diagonally. The monitor will be equipped with a speaker to allow for audio playback from a video tape recording. The monitor shall be fitted with a rack mount for installation into a control console. Standard color monitor controls shall be provided and permanently labeled as to function.

IFB NO. <u>1419</u> Page 16 of 51

VIDEO CASSETTE RECORDING SYSTEM

A videocassette recording system shall be provided to permanently record on videotape any transmission from the closed circuit television camera. The recorder shall have six video heads. It shall have a minimum recording time of 120 minutes and shall use 1/2" wide tape contained in a cassette. The recorder shall be capable of providing black and white or color tapes. The video recorder shall reproduce in all the following operating modes: 60 cycles field frequency, random sync, 2 to 1 industrial sync, EIA sync and NTSC color. It shall be equipped with an audio channel for narration of the recorded video. Both video and audio signals may be recorded at the same time.

The video cassette recorder shall be rack mounted in the Control Console. Desk mounted recorders that are subject to damage during travel will not be acceptable. The faceplate will allow for complete access to the tray controls and the cassette deck for cassette replacement. Recorders that must be removed from the rack mount to replace cassettes will be deemed not acceptable. A microphone with amplifier for adding audio to the videotapes shall be provided.

Video Head Six (6) Standard VHS NTSC

Tracking Automatic microprocessor control

Playback Speeds Five (5) Horizontal Resolution 240 lines

Speeds Three (3) SP, LP, EP Audio Frequency 70 Hz to 10,000 Hz

S/N Ratio >45 dB

PIPELINE DATA COLLECTION & REAL TIME VIDEO CAPTURE SYSTEM

The system shall be a rugged rack mounted video recording and pipeline data acquisition system. It shall have the capability of recording, digitizing and storing single frames of video images and 'real time' live video as well as collecting, storing and printing pipe line inspection data for display and report generation.

The included software package shall be a 32 bit Windows 2000/ Windows XP application and shall be fully Object Oriented. It shall be capable of printing pipeline inspection reports with captured images of defects or other related significant visual information on a standard inkjet color printer located in the inspection truck. The software shall have the following features (minimum):

Image Capture	 Shall store selected digitized picture images on the system controller's hard disk drive. Shall not be limited in number pictures per observation. Shall have the ability to export picture files to Industry Standard Formats to include JPEG, BMP, TIFF formats and be transferable by disk to an external personal computer utilizing standard viewers and printers. Shall be able to print any captured image on the ink jet color printer in the inspection truck. Picture files shall be stored and exported with inspection data. A "thumbnail" preview of all pictures at an observation shall be available. The pictures shall be able to be expanded from thumbnail to window to full screen by utilizing the mouse.
Video Capture	 System shall include a MPEG1 capture module with interface to provide 'real time' storage of live video on the systems hard disk drive. A time reference shall be noted to allow access to the video from the observation. Shall have the ability to store the compressed video files in industry standard MPEG1 format and be transferable with the inspection database by CDR media and/or removable hard drive to an external personal computer.

IFB NO. <u>1419</u> Page 17 of 51

System shall have the ability to write/save a minimum of 45 minutes of video to the CDR. System shall have the ability to write/save 12 hours of video to an optional DVD with pipeline data observation information. DataBase The system software shall be able to operate on MS Windows XP. The software shall be able to use Microsoft Jet Engine 4.0 files or an ODBC database, such as Oracle of Microsoft Sequel Server. The database structure shall be able to retain information on the various structures found within a sewer or storm system. It is important that the structures, nodes, manholes and pipe identifiers and related attribute information be retained as separate tables from the Inspection allowing import of existing data from multiple sources. The data structure shall allow different projects to reside within a single database. Information gathered in projects shall be available to view by project or by system. Data gathered during project inspection shall be available to view by the selected structure. Therefore, all inspections can be viewed on a structure even if gathered in different projects. The user shall be able to define fields and add them to the interface. Database(s) shall be able to be merged by utilizing one of the following "multiple truck configurations": Multiple trucks with a centralized enterprise database: the enterprise database housed at the office is partially replicated to each truck's desktop database. The data obtained during the inspection on the on-board computer's desktop database is synchronized with other inspections performed by other trucks or with the centralized office database via a burned CD or a network. Analysis and comparison is then made based upon the inspections made by the trucks and those stored in the office database. Multiple trucks with third party software used in the office: trucks shall be able to synchronize with each other, replicate the desktop database on an office workstation for viewing, and export/import data to/from third-party software through the use of a conversion tool. Databases without the ability to merge data from multiple truck configurations shall be deemed unacceptable. Third party merging shall require connectivity modules and may require an additional custom plug-in, depending on each individual system. The required connection module(s) and custom plug-in shall comprise solely of those necessary to operate the GRANITE XP system in the trucks with the third party software being utilized in the User The user interface, as viewed on the computer monitor, shall be able to be set up by the user. Interface A series of "Panes" shall be available to customize the interface per the user's preferences. "Panes" shall be defined as windows containing different views of data and inspections. The "Panes" included with the system shall consist of the following: Sewer Main, Inspection, Observation Details, Observation List, Video Playback, Lateral Asset, Lateral Inspection, Lateral Observation, Sewer Node, Sewer Node Inspection, Observation Navigator, Project Navigator, Filters, Still Images, Live Video, Seal & Grout Inspection, Joint & Crack Sealing, and Inclination Survey. The panes shall be synchronized, wherein interacting with the main navigation control will affect the display of data in other open panes. Changes to an observation, inspection, asset, project, or filtering criteria shall display the newly selected properties in all open corresponding panes. Databases that do not have the ability to synchronize data shall be deemed unacceptable. To allow the user to select preferences as to which panes to view, each of these panes shall be able to be "docked" and/or "floating". The user shall have the ability to "dock" the panes side-by-side, place one pane over another, and access each pane through a tab. "Floating" panes shall be able to be positioned anywhere in the application window. The software provider shall provide a common layout for use during an inspection and to review information.

IFB NO. 1419 Page 18 of 51

	•	The user shall be able to change the field labels. The module to change labels shall be part of the system and shall not require third party software.
	•	A pipe graph shall be available and the pane viewable during the inspection. The pipe graph shall show service connections with a graphic indicating the location of the connection. The
		user shall have the ability to control the graphical representation of the observations made during the inspection by selecting any combination of the following features: Connections, Defects, Continuous, Laterals, Informational, and/or Status Bar.
	•	A zoom feature shall be available for the pipe graphic that allows the user to select a portion of the pipe with a mouse and zoom to that specific portion. A grid system shall be provided to display the location of a 'zoomed' observation within 10 feet.
	•	The user shall be able to select live video, playback video, and view captured pictures on the screen simultaneously.
Inspection	•	The code system shall be user definable with a code generator included within the program. Systems requiring a third party software to set up codes shall be unacceptable. Codes generated shall be individual or developed in a hierarchical system. An Icon shall be selectable for a code providing easy identification of an observation.
	•	To start an Inspection, the user shall be able to select structure, nodes or manhole information already within the database. If the data is not available, the operator shall be able to enter the correct information and the information shall be retained in separate tables for future
	•	selection. A graph shall be provided for structures that show the direction of entry and exit of mains. The graph shall show the direction, ID size and flow of each connection. The operator shall be able to collect information on point observations (observation at a single point of the run) or as continuous observations (observations that run for a length of the pipe). Multiple continuous observations shall be able to be collected by overlapping or nesting within another continuous observation. Since it may not be known if an observation is
	•	going to be point or continuous, the operator shall be able to leave an observation open or "pending" and be able to select the observation type after traversing the pipe. A pane shall be available to view all of the observations noted in a list. The list shall contain columns showing the observation code, distance from the entry point, length of continuous defects, Clock/From, Clock To, modifier/severity and rating. The information in this list of observations shall be sortable by clicking on the column header. Should the user wish to sort by Code, clicking on the code column header shall sort the data. All applicable columns shall
Data Filter	•	have the ability to sort in either ascending or descending order by utilizing the mouse. The system shall include (2) data filters, Simple and Advanced, to restrict the data displayed in the application and reports per the user's preferences. The results returned by the filters shall match all specified properties simultaneously.
	•	To aid in locating the correct structure and main upon which to initiate or view an inspection, the user shall be able to filter the data by Project, Structure, Inspection Information, Observation Information, and/or defined custom filters.
Titler	•	A keyboard, mouse, and footage counter shall provide the interfaces to the Video Character Generator and PDC&PCS controller's Windows program.
	•	Camera footage shall be maintained in real time and shall be displayed on the video monitor as well as the video character generators illuminated footage display at the control console. All other information for titling shall be sent to the character generator by a serial
Printer		communication port connection from the system controller.
1111101	•	The desktop, color Ink Jet Printer shall interface with the controller parallel printer port. The printer shall be capable of reproducing color video captured pictures or color inspection reports without the need to change ink cartridges.
	•	Printer resolution shall be a minimum of 600x300-dpi color. Memory shall be a minimum of 512K.

IFB NO. 1419 Page 19 of 51

	<u>e</u>
Optional Modules	 A module shall be available for determining the slope of a pipe. The inclination module shall be produced graphically within a pane that can be selected for viewing by the operator. The graph shall be "built" while information is being gathered allowing the user to visually see the slope at any point in time. The graph shall be available for viewing during the inspection and while entering inspection data. A grout and seal module (G&S) shall be available. The G&S module shall record pressure tests graphically and record the amount of material used. A Structure, Node and Manhole Inspection module shall be available. The user shall be able
	to record information about the location, size, material and type of the structure.
Support	 Manufacturer shall have full time, in-house support staff for both hardware and software. Optional support packages shall be available to keep the user updated at a contracted price. Training shall be available from the vendor on-site and via the Internet. Suppliers having third party suppliers of software, thus requiring the customer to contact third party for warranty and support services, shall be deemed unacceptable.
Additional Accessories	 System shall include a User Guide in a hard-copy format and on CD (compact disk). System shall include a Quick Reference Card that depicts all menu shortcuts.

TV CABLE REEL ASSEMBLY

A TV cable reel assembly will be supplied with a minimum storage capacity for 1000' of 1/2" or 5/8" maximum diameter video transmission cable. The reel shall be chain driven and properly reinforced to withstand 200% of the maximum motor torque to insure trouble-free operation. The reel shall be powered by a variable speed electric motor and driven through a multi-gear ratio transmission. The transmission will have multiple speeds to limit the motor load during varying towing conditions. The reel shall be equipped with an automatic level wind assembly to evenly pay out or rewind the cable to prevent pile-ups, entanglements and burying. The reel shall be built into a rugged frame designed for fixed mounting into a unit. The reel drum and level wind shall be open to view to allow for inspection during operation. TV REEL SYSTEMS THAT ARE NOT CONTROLLED REMOTELY OR DO NOT HAVE A MULTI RATIO TRANSMISSION WILL NOT BE ACCEPTABLE.

TV CABLE REEL SLIP RING ASSEMBLY

The reel shall be equipped with a continuous contact rotary slip ring assembly. The assembly will be equipped with a minimum of twelve (12) slip rings to conduct the necessary current and signals through the reel. SLIP RING ASSEMBLIES WITH LESS THAN TWELVE (12) RINGS WILL NOT BE ACCEPTABLE. The slip ring assembly shall be fully enclosed in a dust and weatherproof high strength aluminum housing. Systems equipped with the high maintenance copper slip ring assemblies shall not be considered acceptable. Mercury Slip Rings shall not be considered acceptable.

CABLE FOOTAGE METER, LOCAL /REMOTE ELECTRONIC READOUT

The unit shall be equipped with a distance counting meter designed to accurately measure cable travel in feet and tenths of feet. The metering head shall be constructed of machined cast aluminum parts and shall include the necessary sheaves, wheels and guides. The meter shall be equipped with a meter for use at the rear of the unit and an electronic counter, which is connected to the Data Display System at the operator's station.

CONTROLLER TV CABLE REEL MOTOR/POWER WINCH MOTOR

A single combined controller will be furnished to operate either the TV Cable Reel Motor or Power Winch Motor if supplied. It will be designed for mounting at the control console in an angular panel. The controller shall be equipped

IFB NO. <u>1419</u> Page 20 of 51

with an ON/OFF switch, an ON indicator light, clutch control (forward/reverse switch) and speed control with built in automatic off positioning for safety when the operator releases the speed control. CONTROLLERS THAT DO NOT INCLUDE A SAFETY OFF SWITCH WILL NOT BE ACCEPTABLE.

TV CABLE REEL CONTROL REMOTE AND LOCAL

A gearshift selector and linkage shall be provided at the control console to operate the reel mounted transmission. The combination of the reel motor controller and transmission gearshift selector will maximize the efficiency of the television inspection operation and minimize the load on the reel and motor. A speed controller, gearshift selector and on/off switch shall be provided at the reel for local control during set up.

COMBINATION VIDEO TRANSMISSION/TOW CABLE, KEVLAR FIBER ARMORED, - MULTI-CONDUCTOR

A combined video and towing cable shall be furnished in a continuous length of 1000 feet (minimum) and shall consist of the following (minimum):

the following (illimite	·····/·
Cable	 The cable shall consist of a coaxial core wrapped with a braided wire shield ground return. An additional braided wire shield shall encircle both the coax and ground return and
	shall act as a Faraday shield. Cables with only a single braided wire shield acting as a ground return shall be deemed unacceptable.
	A total of 10 separately insulated and color-coded 18/20 gage standard copper conductors shall be bundled and twisted in groups of 3 with one conductor remaining single.
	• To prevent cable breakage when placed under load, all wire bundles, wires, and the coax shall twist in a serpentine pattern for the entire length of the cable so that all wires, including the coax, are the same total lengths. <i>Cables that have a 'center'</i>
	coax, making it the shortest and therefore the most easily broken conductor, shall be deemed unacceptable.
	• The cable diameter shall be no greater than .450 inches and shall be able to withstand external pressures of up to 400 psi.
	• The cable weight shall not exceed 110 lbs. per 1000 feet.
Cable Jacket	• The exterior of the cable shall consist of a minimum 1/16" thick abrasion resistant high-density nylon composite outer jacket embedded with Kevlar fibers to provide the cable with the required towing tensile strength.
	• Shall provide a lower coefficient of friction to reduce drag and therefore increase its resistance to wear.
Cable Connection	• The end of the multi-conductor cable shall be equipped with a waterproof scotchcast splice to allow for the direct wiring of the female connectors.
	An adjustable strain relief shall be provided to transfer the cable towing strength from the cable to the camera skids or transporter.
	The termination shall consist of the necessary connectors and dummy plugs.

IFB NO. <u>1419</u> Page 21 of 51

SELF-PROPELLED CAMERA TRANSPORTER

A self-propelled camera transporter shall be provided for inspecting 8" diameter relined pipe and storm drains/wastewater pipelines up to 48" in diameter. The transporter assembly shall be designed to operate optimally with 1500' multiconductor or 2000' single conductor cable and shall consist of the following (minimum):

Transporter

- Shall include the following (minimum) equipment: (6) Driven Wheels, available in (3) different sizes.
- Shall operate through a minimum of (1500) feet of multi or single conductor video cable in suitable pipe conditions.
- Shall have sufficient power and traction to inspect a minimum of (1000) feet from the manhole entry point in suitable pipe conditions.
- Shall be designed to carry a pan & tilt camera to inspect pipes beginning at a minimum diameter of 8".
- The transporter, when used with the pan & tilt camera, shall fit into a 7" diameter circular area with the camera in the home position to optimize clearance in an 8" diameter relined pipe. All transporter / pan & tilt combinations with less clearance than specified will be deemed unacceptable.
- Shall include a <u>two speed</u> transmission to optimize traction by doubling the torque in difficult pipe conditions or in larger diameter pipe. There will be a protected manual shifter assembly on the transporter to facilitate quick gear ratio changes. Camera transporters with a one speed / gear ratio transmission shall not be acceptable due to the substantial reduction of torque / traction produced when larger diameter wheels are used.
- The combined length of the transporter / pan & tilt camera assembly shall not exceed 33" with the camera in the home position. This will allow the inspection and traversal of 8" diameter pipe with off sets or meandering conditions and facilitate entry into short inverts. Camera / transporter assemblies exceeding 33" in length will be deemed unacceptable.
- Shall include a heavy-duty drive motor specifically designed to meet the power requirements of the system, regardless of size of pipe being inspected.
- Shall be equipped with self-propelled power forward, power reverse, and free wheel capabilities.
- Shall be constructed of brass, stainless steel, and aluminum alloy.
- Shall have speed and direction controlled from the control console.
- Shall be retrievable in the free wheel mode by the video cable reel to reduce the normal wear on the drive motor by 50%.
- Shall have full, variable speed in power forward or power reverse modes. The maximum speed for camera / transporter assemblies shall be 45 fpm for pipe configurations up to 15 and 65 fpm for pipe configurations up to 48". Camera / transporter assemblies incapable of operating at the specified speeds will be deemed unacceptable.
- Shall include an electrical connection for an external light source to ensure a clear picture in various pipe configurations.
- The self- propelled camera carrier shall weigh a minimum of 50 lbs. without the camera in the 8" configuration and shall weigh no less than 90 lbs. in the 30" configuration.

Tires

• The Transporter shall include (6) wheels, available in (3) different sizes, designed to maximize traction in each pipe size. The transporter shall be capable of inspecting pipes up to 48" diameter with the addition of larger diameter wheels. The (2) smaller diameter wheels, designed to help negotiate offsets in larger pipe configurations, shall remain affixed to the middle axle regardless of pipe size to be inspected. *Transporters driven by helts will not he*

IFB NO. 1419 Page 22 of 51

	acceptable	. Trans	porters	with ex	ternal d	rive tra	in comp	onents	will be	ипассе	ptable.	
	WHEELED TRANSPORTER TIRE MATRIX											
				Tire Re	quirem	ents for	r Vario	us Pipe	Size Co	onfigur	ations	
		7"	8"	10"	12"	15"	18"	21"	24"	30"	36"	48"
Tires/Wheels												
	meter, Qty. 6,	6	6									
	ard Equipment											
Tire, 5.0" Dian	- •			6	6	6						
(Kit, Tire, WT)												
	Tire, 10.5" Diameter, Qty. 4,						4	4	4	4	4	4
(Kit, Tire, Kno												
	Tire, 10.8" Diameter, Qty. 4,						4	4	4	4	4	4
Optional Equi	-						4	4	4	4	4	4
(Kit, Tire, Che	VIOII, W 1912)											
Camera Lift	 A remote-operated mechanical camera lift (optional) shall be provided for pipeline inspections ranging from 18" – 48" in diameter to prevent the need for an operator to enter the manhole to position and reposition the camera height. Camera height shall be variable from the collapsed position to 10.5" in the extended position. 											
Tuon an auta:	Transporter shall be controlled via a desk-mounted controller.											
Transporter Controller	• Shall include the following indications and controls: Fused Output Power, "ON / OFF"											
Connonei	Switch with Indicator, Fuse Socket, Amp Meter, Directional Switch, and Speed Control with				I with							
	Automatic Off				aton							
	The speed control shall allow for an infinite control of the speed of the transporter from stop to maximum speed.											

SELF-PROPELLED CAMERA TRANSPORTER

The unit shall be labeled and listed as a minimum by a Nationally Recognized Testing Laboratory (NRTL) to the applicable Standard for Safety for Closed Circuit Television Equipment, UL 2044, 2nd edition, 11/9/01. A listing report must be supplied that certifies the aforementioned equipment is acceptable as defined by 29 CFR 1910.399 and required by 29 CFR 1910.303(a). Self-certification or certification by a laboratory that is not an NRTL will be deemed unacceptable. NRTL labeled and listed equipment shall be supplied as required by the FEDOSHA memorandum, dated September 25, 2002, page 3, Section on Compliance, prepared by John L Henshaw, Assistant Secretary of Occupational Safety and Health.

A self-propelled camera transporter shall be provided for inspecting pipelines ranging from 6" to 15" in diameter. The transporter assembly shall be designed with the ability to automatically position the camera and lighting system to the centerline of the pipe being inspected while providing protection from offsets and in-line obstructions.

Transporter

Shall include the following (minimum) equipment: Weighted Track Width Adjustment

IFB NO. 1419 Page 23 of 51

B 110. 1117			1 45	0 23 01 31		
	 Bars, Transporter Controller, and Shall be equipped with a dual designed to maximize traction in Shall be equipped with self-procapabilities. Shall have full, variable speed in Shall be capable of inspecting padjustment Bars below). Shall have speed and direction c Shall include self-cleaning, agric Shall include a heavy-duty direquirements of the system, rega Shall be retrievable in the free water on the drive motor and driv Shall include a kit containing ad The transporter, when used with diameter relined pipe and will he offsets. All transporter / optical in 6" diameter pipe will be deem The combined length of the transport with the camera in the hordiameter pipe. Optical Zoom length will be deemed unaccept. 	fastened, rate and pipe sopelled power for pipes 6" – ontrolled from the cultural type rive motor ardless of size wheel mode we train by 5 ditional character and the pan and ave the ability of the position of the panera / of the position of the position of the position of the panera / of the position of the pipe sporter / options of the pipe sporter / op	ward or pow to a pow	yer reverse in the prevention of the prevention	werse, and to modes. Weighted Tr vent chain to meet to meet to meet to to reduce to mera, shall file to reduce to mera, shall file to mean t	free wheel ack Width binding. the power the normal at into a 6" pipe with to operate not exceed ersal of 6"
Transporter Controller	 Transporter shall be controlled via a desk-mounted controller. Shall include the following indications and controls: Fused Output Power, "ON / OFF" Switch With Indicator, Fuse Socket, Amp Meter, Directional Switch, and Speed Control with Automatic Off. 					
Weighted Track Width Adjustment Bars	 Shaft extenders & pipe adapters shall be provided to position the camera and lighting system to the centerline of the pipe being inspected. Transporter weights shall increase for each pipe size as follows: 					
	Pipe Size (Inches)	6"	8"	10"	12"	15"
	Weight w/Camera (Lbs)	40	42	46	50	52
	Weight w/o Camera (Lbs)	26	28	32	36	38
/ 		•			•	

Powered reverse only transporters, which have the potential of running over the cable termination during retrieval operation, thus requiring the operator to coordinate the speed of the transporter with the speed of the video cable reel, shall be deemed unacceptable. However, powered reverse shall be supplied to facilitate precise inspections and backing out of dropped manholes.

SELF PROPELLED LATERAL INSPECTION / PAN and TILT MAINLINE INSPECTION SYSTEM

The unit shall be labeled and listed as a minimum by a Nationally Recognized Testing Laboratory (NRTL) to the applicable Standard for Safety for Closed Circuit Television Equipment, UL 2044, 2nd edition, 11/9/01. A listing report must be supplied that certifies the aforementioned equipment is acceptable as defined by 29 CFR 1910.399 and required by 29 CFR 1910.303(a). Self-certification or certification by a laboratory that is not an NRTL will be deemed unacceptable. NRTL labeled and listed equipment shall be supplied as required by the FEDOSHA memorandum, dated September 25, 2002, page 3, Section on Compliance, prepared by John L Henshaw, Assistant Secretary of Occupational Safety and Health.

IFB NO. <u>1419</u> Page 24 of 51

The Self Propelled Lateral Inspection / Pan and Tilt Mainline Inspection System shall be designed to operate in 6"-30" mainline sewer pipes and lateral pipes 2" and larger in diameter. The system shall be able to accomplish pan and tilt inspection of the mainlines and view the lateral services, and a second camera will be supplied to enter the lateral service from the mainline to inspect up a maximum of 80 ft. into the lateral. The multi-conductor system shall operate on 0'-1000' cable utilizing dual cable reels only and shall have the ability to simultaneously display both mainline and lateral footage. The Self-Propelled Lateral Inspection / Pan and Tilt Mainline Inspection system shall be compatible with additional mainline television inspection equipment.

The Self Propelled Lateral / Pan and Tilt Mainline Inspection System shall consist of the following:

- > Self propelled lateral launcher
- > Two interchangeable color mini cameras, one for pan & tilt operations and one for lateral launching.
- ➤ Camera lighting system (1) integral light ring per camera external auxiliary light ring provided for mainline pan and tilt mini / mainline camera
- ➤ Camera centering ball
- > Controller for cameras and self propelled lateral launcher
- > Optional 50 ft. or 80 ft. push cable assembly
- Reel with electric retrieve, automatic levelwind, variable speed control, and clutch for lateral push cable / camera
- ➤ All necessary interconnect cables
- The self propelled launcher carrier shall be a variable weight design and shall consist of the following (minimum):

Weighted Adapters	•	Weighted adapters will be supplied to optically center the mainline pan and tilt camera in the pipe. Systems that do not use weighted adapters to optically center the mainline pan & tilt camera within the pipe will be deemed unacceptable.
	•	The same weighted adapters will be used to increase traction and bottom clearance of the unit as pipe diameter increases.
	•	Weighted adapters shall be used to achieve variable weight per the configuration table below:

DESCRIPTION	P/N	PIPE SIZES / QUANTITY					
		8''	10''	12"	15'		
Pipe Adapter, 3x Width	MC221	_	-	1	2		
Pipe Adapter, 1x Width	MC222	1	3	5	1		
Pipe Adapter, 1x Width, Brass	MC222B	1	1	1	1		
WEIGHT	BREAKDOWN	BY CONFI	GURATION				
Pipe Size (Inches)	6''	8''	10''	12''	15'		
					1		

SELF-PROPELLED LATERAL INSPECTION SYSTEM LAUNCHER –

A self propelled launching robot shall be furnished to propel the small diameter pipe push camera from inside the mainline pipe a maximum of 80 lineal feet up to the lateral. The Launcher shall consist of the following (minimum):

- The launcher shall fit the shape of the pipe and perform the rotation, extend and retract camera-positioning functions.
- The launcher will be provided with an optional 50' or 80' of combination push cable/TV cable with powered retrieve electric reel and the necessary connecting cables. The push cable will be provided with a stainless steel outer sheath to maximize cable protection upon impact with off set joints, protruding laterals, risers, pipe walls, debris, and roots. Systems using push cable constructed with fiberglass push rod that is subject to wear and breakage will be deemed unacceptable.
- The reel shall include an automatic levelwind designed to wrap the cable in layers around the spool evenly,

IFB NO. 1419 Page 25 of 51

therefore preventing the cable from overlapping in one area and possibly becoming entangled and/or clearing the flange. Systems that operate without an automatic levelwind cable handling system shall be deemed unacceptable.

- The launcher shall be able to fully function within a 6" diameter mainline sanitary sewer.
- The self-propelled transportation platform for the launcher shall have forward, reverse and free wheel functions with a maximum speed of 60 feet per minute.
- When utilized in 8" diameter pipe, the Lateral & Mainline Probe shall not exceed the following dimensions: 6"W x 4.75"H x 36.5"L.
- The Self Propelled Lateral / Pan & Tilt Mainline Inspection System shall be designed to be compatible with an Inspector General to operate as a 'stand-alone system'. To perform all Self Propelled Lateral /Pan & Tilt Mainline functions as part of an Inspector General system, the following shall be supplied in addition to the fore mentioned equipment: Interconnect Box Assembly, Prodata Interconnect Cable, Reel Interconnect Cable Assembly, Interconnect Cable Assembly, Cntrl/Control Panel Cable, 1000' IGGY/LAMP Cable with 12-pin end & 12/5/4 Cable Adapter.

MAINLINE PAN & TILT AND LATERAL PUSH INSPECTION COLOR CAMERAS –

The Self-Propelled Lateral Inspection System shall include two cameras. One small diameter Mini Mainline camera shall be provided to provide pan and tilt viewing of the mainline pipe and one to monitor the push camera operation. The pan & tilt camera shall be mounted on the front of the Self Propelled Lateral Launcher, and the other camera shall attach to the 80 foot push cable designed to operate in 2" and greater house lateral pipes. Self-Propelled Lateral Inspection Systems without pan and tilt mainline inspection capabilities shall be deemed unacceptable.

Color Mini	Shall be designed to operate through a maximum of 80 feet of combination push rod
Camera (Lateral)	and TV cable.
	Shall be fixed to the insertion cable.
	Shall include a set of extensions for use in larger pipe.
Color Mini	Shall have an optical visual range of 270 degrees rotate and 200 degrees pan.
Camera (Pan & Tilt)	Shall be fully capable of mainline inspection and viewing of lateral services accomplished by a one-pass inspection with or against the flow.
	• Shall have the ability to monitor the insertion of the lateral inspection camera into the lateral service.
Both Cameras	 Shall be 'waterproofed' with the ability to operate in underwater conditions up to 5psi. Shall utilize white LED lighting and have variable light intensity. Shall be manufactured with solid state circuitry to withstand shocks and vibrations. Shall have fixed focus, fixed iris, and auto speed shutter. Shall be capable of providing greater than 450 lines of resolution. Scanning shall be 525 lines, 60 fields, 30 frames and 2:1 interface.
	 Camera power consumption shall be 175 mA at 15 volts DC. Cameras shall be interchangeable. Camera dimensions shall not exceed 1.5" diameter x 3.5" length. Geometric distortion of the image shall not exceed 2%.
PiP Capability	• The camera/monitoring system shall be designed to allow for the live television picture of either the mainline or lateral camera for picture in picture display.

IFB NO. <u>1419</u> Page 26 of 51

CAMERA LIGHTING SYSTEM -

Lighting for the lateral inspection camera shall be suitable to allow for a clear picture in the pipe.

Light Rings	A built in light ring containing (12) each solid state light emitting diodes shall be provided for each camera.
	• To ensure adequate lighting for larger diameter pipe inspections, a large pipe light source containing (36) each solid state light emitting diodes shall be provided for the mainline camera only.
	• The light intensity of the large pipe light source shall be variable and controlled by the operator.
	A unique over-voltage protection circuit shall be installed to prevent burnout of LED's.

SELF-PROPELLED LATERAL INSPECTION SYSTEM CONTROLLER –

The system shall be furnished with a control system.

Controller	Shall be manufactured using ergonomic controls and indicators.
	Shall function as a stand-alone, desktop unit.
	Shall include launcher/self propelled robot control with extend/retract, left/right
	rotation, camera selection, picture in picture selection, and cable drive speed.

SONDE AND RECEIVER - BATTERY OPERATED

The system shall include a lightweight, hand held battery operated receiver for detecting signals in both nonmetallic and cast iron pipes. The unit shall operate on 6 AA batteries. The unit shall be equipped with a meter which indicates the strength of the signal on a scale of 1 to 10, a sensitivity knob which allows the operator to control the amount of signal seen on the meter and heard on the speaker, a speaker which allows you to hear the transmitter and a phone jack for the optional headphones. Working depth for the transmitter shall be 10 feet, continuous signal. The transmitter shall be housed in a flexible casing for easy attachment and can be utilized in 2" and greater pipe.

CABLE GUIDE EQUIPMENT, TV only

Manhole cable guide rollers shall be provided to protect the TV cable, and/or winch cable from damage during the inspection. They shall be constructed of aluminum to minimize weight and be equipped with corrosion resistant pulleys. The minimum pulley bend radius shall be 6".

Six (6) 4.8 foot (57.5") quick coupling spring loaded extension poles will be supplied to connect to the down hole cable guides. To minimize weight, the quick coupling extension poles shall be constructed of .125" thick fiberglass tubing with an outside diameter of 1.25". The fiberglass tubing shall consist of 1 ounce continuous strand matt encapsulated with vinylester resin. The weight per each pole shall not exceed 2.8 lbs. The extension poles shall be corrosion resistant and orange in color to ensure visibility for added safety.

Manhole adapter hooks will be supplied to secure the guide system to the manhole ring. A manhole top roller assembly shall be supplied to provide topside cable protection. The top roller shall consist of a welded steel angle iron frame with the necessary pulleys. Rear door mounted pole and guideholding brackets with appropriate safety warnings shall be provided. Downhole equipment requiring manhole entry to install shall not be deemed acceptable.

IFB NO. <u>1419</u> Page 27 of 51

TV MAINTENANCE TOOL KIT

A kit containing sets of tools as listed herein shall be furnished. The kit shall contain the necessary items to field-test, adjust and repair a number of components on the television systems. This kit must include: volt OHM test meter (0-600 milliamps), Allen wrench set, and soldering kit.

OPERATING MANUALS

Operating manuals shall be furnished that contain the recommended operating instructions and maintenance procedures for all systems and components being furnished. The instructions shall provide step-by-step use methods and include adequate illustrations, diagrams and other aids. Special attention shall be given to safety considerations for personnel and the equipment.

SYSTEMS PARTS BOOK

A parts book supporting field repair and replacement of the various components of the delivered systems shall be furnished. This book shall include exploded or cutaway drawings of numerous components and assemblies with each drawing referencing a manufacturer's part number and description.

INSTRUCTIONAL VIDEO TAPES

The vendor shall provide VHS format training videos covering the following minimum requirements:

Video 1

TV System instructional video covering the recommended operation, step by step set up procedures and safety precautions for personnel and equipment.

Minimum run time, 12 minutes.

Video 2

Trouble Shooting instructional video covering step by step procedures on continuity, cable testing, trouble shooting steps and safety precautions for personnel and equipment. Minimum run time, 14 minutes.

Video 3

TV Cable End Replacement instructional video covering step by step procedures on replacing the TV cable end, soldering techniques, connection location and safety precautions for personnel and equipment.

Minimum run time, 34 minutes.

All videos provided must be produced from BataCam SP studio cameras and edited on "1" master dubs allowing for the maximum reproduction quality of the VHS videos provided. Videotapes produced for the purpose of sales or marketing shall be deemed not acceptable. Video training tapes produced from consumer grade camcorders shall be deemed not acceptable.

IFB NO. <u>1419</u> Page 28 of 51

INTEGRATED POWER CONTROL UNIT

A fully integrated camera, lighting, and crawler control unit, built into a metal protective portable case, with full-length sunshade shall be provided. The control unit shall include a built-in 9" solid state color monitor and alpha/numeric data generator and video display unit. A high intensity LCD screen shall be included to display system configuration and diagnostic conditions. Front panel controls shall include light intensity, tractor speed, VCR/Camera monitor select, crawler direction, and crawler start/stop.

A built-in alpha/numerical video character generator and display shall be provided. The data generator shall generate footage count, defect information, and/or free-form comments, for display on the video monitor and recording on the VCR. A standard (IBM) "QWERTY" keyboard shall be provided for generating defect and commentary entry. The format and position of the on-screen data shall be adjustable, within the video display, to fit pipe conditions or operator requirements. Character intensity shall be fully variable from black to white. A standard IBM parallel printer output shall be provided to accommodate a hard copy, sequential printout inspection report, using a standard data printer. The Character Generator shall have a minimum of 55 preprogrammed defect codes, and 70 user programmable defect information codes.

A hand held controller for a scanning or pan & rotate type camera, light intensity, camera remote focus iris override, crawler direction (forward, reverse, free wheel) and speed will be provided. The remote control shall be fabricated of a high impact plastic material and shall include a weatherproof 24 key keyboard, indicator lights, and LCD diagnostic display. The remote shall connect to the control unit through an 8-foot, heavy duty, detachable, coiled cable. A holster shall be provided for storing the remote at the control unit. A receptacle shall be provided to accommodate a tractor foot pedal speed control.

The weight of the integrated control unit, including monitor, shall not exceed 75 lb.

The control center shall operate from a 110 volt 60 Hz or 220 volt 50 Hz power source. It shall not be necessary to adjust the camera voltage to accommodate different lengths and types of cable (flexible or integrated push/ rod type). Camera power, lighthead power and transporter power shall be protected by separate external fuses. The AC power input shall include an external resettable, UL approved, ground fault interrupt, and line fuse with illumination indication of 'blown' condition. All fuse holders shall contain a spare fuse for easy in field replacement. Other external connections shall include a buffered external video monitor output, a parallel printer output port (IBM), audio and video VCR input/output plugs (4). The Control Center must be capable of operating a mini camera, fixed view camera, and Pan & Tilt camera used with skids or a tractor without the use of external adapter modules.

The built-in video display monitor shall be a 9" solid state color unit. The video response shall be in excess of 350 lines (horizontal). Front panel controls shall include power on/off, vertical hold, tint, color, brightness, and contrast.

MOTORIZED TV CABLE DOLLY ASSEMBLY

A portable, motorized cable dolly shall be supplied for storing the TV cable. The Dolly shall have sufficient capacity to hold up to 1000 feet of multi conductor mainline TV cable. Cable reels that will not accommodate a minimum of 1000' feet of multi conductor cable will not be acceptable.

The dolly shall be equipped with a continuous contact assembly with a minimum of 12 gold plated sliprings and levelwind cable handling system. The slipring assembly shall have a load capacity of not less than 10 Amps at 120 Volts. Slipring assemblies incorporating listed hazardous materials (i.e. Mercury) shall not be acceptable.

IFB#1419.doc/txtlou

http://www.yorkcounty.gov/purchasing

IFB NO. <u>1419</u> Page 29 of 51

The dolly frame shall be constructed of lightweight tubular steel and contain a VCR compartment and one steel equipment shelves. The entire assembly shall be finished with a rust resistant white epoxy based industrial coating. The dolly shall be equipped with two pneumatic wheels for easy handling. The weight of the dolly shall not exceed 200 pounds including cable. The dolly shall not exceed 46" high by 25" wide to allow for easy movement through doors and passages.

The dolly shall provide free wheel cable discharge and a variable speed 1/4 HP electric take up motor for cable retrieve and rewind. The dolly shall contain up to 1000' of multi-conductor mainline cable.

${\bf COMBINATION\ VIDEO\ TRANSMISSION/TOW\ CABLE,\ KEVLAR\ FIBER\ ARMORED,\ -\ MULTI-CONDUCTOR}$

A combined video and towing cable shall be furnished in a continuous length of 1000 feet (minimum) and shall consist of the following (minimum):

t.								
Cable	The cable shall consist of a coaxial core wrapped with a braided wire shield ground return.							
	• An additional braided wire shield shall encircle both the coax and ground return as shall act as a Faraday shield. <i>Cables with only a single braided wire shield acting</i>							
	a ground return shall be deemed unacceptable.							
	• A total of 10 separately insulated and color-coded 18/20 gage standard copper conductors shall be bundled and twisted in groups of 3 with one conductor remaining single.							
	• To prevent cable breakage when placed under load, all wire bundles, wires, and the coax shall twist in a serpentine pattern for the entire length of the cable so that all wires, including the coax, are the same total lengths. <i>Cables that have a 'center'</i>							
	coax, making it the shortest and therefore the most easily broken conductor, shall be deemed unacceptable.							
	• The cable diameter shall be no greater than .450 inches and shall be able to withstand external pressures of up to 400 psi.							
	The cable weight shall not exceed 110 lbs. per 1000 feet.							
Cable Jacket	• The exterior of the cable shall consist of a minimum 1/16" thick abrasion resistant high-density nylon composite outer jacket embedded with Kevlar fibers to provide the cable with the required towing tensile strength.							
	• Shall provide a lower coefficient of friction to reduce drag and therefore increase its resistance to wear.							
	• The end of the multi-conductor cable shall be equipped with a waterproof scotchcast							
Cable Connection	splice to allow for the direct wiring of the female connectors.							
	• An adjustable strain relief shall be provided to transfer the cable towing strength from							
	the cable to the camera skids or transporter.							
	The termination shall consist of the necessary connectors and dummy plugs.							

IFB NO. <u>1419</u> Page 30 of 51

VIDEO CASSETTE RECORDING SYSTEM

A videocassette recording system shall be provided to permanently record on videotape any transmission from the closed circuit television camera. The recorder shall have six video heads. It shall have a minimum recording time of 120 minutes and shall use 1/2" wide tape contained in a cassette. The recorder shall be capable of providing black and white or color tapes. The video recorder shall reproduce in all the following operating modes: 60 cycles field frequency, random sync, 2 to 1 industrial sync, EIA sync and NTSC color. It shall be equipped with an audio channel for narration of the recorded video. Both video and audio signals may be recorded at the same time.

A microphone with amplifier for adding audio to the videotapes shall be provided.

Video Head Six (6) Standard VHS NTSC

Tracking Automatic microprocessor control

Playback Speeds Five (5) Horizontal Resolution 240 lines

Speeds Three (3) SP, LP, EP Audio Frequency 70 Hz to 10,000 Hz

S/N Ratio >45 dB

PAN, TILT, and OPTICAL ZOOM CAMERA

The unit shall be labeled and listed as a minimum by a Nationally Recognized Testing Laboratory (NRTL) to the applicable Standard for Safety for Closed Circuit Television Equipment, UL 2044, 2nd edition, 11/9/01. A listing report must be supplied that certifies the aforementioned equipment is acceptable as defined by 29 CFR 1910.399 and required by 29 CFR 1910.303(a). Self-certification or certification by a laboratory that is not an NRTL will be deemed unacceptable. NRTL labeled and listed equipment shall be supplied as required by the FEDOSHA memorandum, dated September 25, 2002, page 3, Section on Compliance, prepared by John L Henshaw, Assistant Secretary of Occupational Safety and Health.

The Pan, Tilt, and Zoom Camera shall be designed for use in 6" diameter relined pipe and larger. The unit will be designed to provide close-up views of pipe walls during inspection including minute defects and voids. The unit will be color, shall operate optimally through a maximum of 4000' multi conductor or 2000' single conductor cable, and shall consist of the following (minimum):

Camera	 Chassis construction shall include 100% solid state circuitry designed to withstand shocks and vibration normally sustained while being pulled through a pipe. The camera module shall be an industrial model only. Repackaged consumer grade cameras (i.e. Camcorders) will be deemed unacceptable for use in a pipeline television inspection system. Operating temperature ranges of the camera shall be 0 degrees C to 50 degrees C. Cameras incorporating built in lighting systems that generate heat exceeding the operating temperature parameters listed by the base stock camera manufacturer will not be acceptable. The camera shall develop a true color and transmit a sharp image picture on the video bandwidths only. Picture transmission systems that require the use of R.F. suppressors and are subject to local transmitter interference shall not qualify as being equal. Full color video bandwidths shall be provided with no sacrifice of low frequency response. There shall be no visible streaking of the low frequency test bars when viewing a standard EIA Test Chart. Shall not exceed an overall length of 17.7", a head length of 6.6", and a camera barrel diameter of 3".
Camera Optical &	• Optical & digital zoom and zoom & focus speeds shall be selectable from the maintenance terminal. Remote control of pan, tilt, pan and tilt homing, optical zoom, manual focus, automatic focus, shutter speed, frame integration, manual iris, diagnostics and internal lights

IFB NO. <u>1419</u> Page 31 of 51

<u>D NO. 1417</u>	1 ugc 31 01 31
Optical &	shall be provided.
Digital Zoom	Optical Zoom Range: 10x
	• Digital Zoom Range: 4x (40x with optical zoom)
	• Total effective zoom ratio: 40:1
	• The lens shall be an automatic iris type with a manual override (controlled from the control
	console) to control the illumination range for an acceptable picture between 3 and 10,000
	lux.
Pan and	• Full Pan (no load): 56 deg/sec, full pan in 5-7 seconds
Rotate Speeds	• Full Rotation (no load): 31 deg/sec, full rotation in 11-13 seconds
Camera	• The camera mechanics and electronics shall be housed in a high strength, damage resistant,
Housing	aluminum housing with a stainless steel tube.
	• The rear portion of the camera shall not exceed 3 inches in diameter to allow for operation in
	skids and self-propelled units that are designed for 3-inch diameter cameras.
	• The housing shall be 1/8" minimum wall thickness. <i>Housings with thinner stainless steel</i>
	walls or aluminum walls that easily dent on impact will not be considered equal.
	• The front of the camera head housing shall have a view port of optical grade sapphire.
	• The rear of the housing shall have a recessed bell to protect the indexed cable connector.
Mounting	• The forward portion of the camera shall not exceed 4.5 inches in diameter and will include
Fork	the mounting fork, camera head and lighting.
	• The camera forks must be rounded or chamfered and be the same diameter as the forward
	portion of the camera to eliminate any sharp corners that can become caught on obstructions.
	Camera forks that exceed the diameter of the camera housing that are subject to damage
	inside the pipe are not acceptable.
	• The mounting fork will rotate 360 degrees with an optical viewing angle of 400 degrees and
	shall allow the camera head to pan mechanically 285 degrees with a pan viewing angle of
	331 degrees.
Camera	Shall be remotely controlled from the control console.
Lighting	• Shall be integrated into the camera and include four 12W xenon lamps equaling 48 watts.
	• Shall provide adequate lighting in pipe sizes from 6" – 72" in diameter. <i>Cameras that</i>
	require external mounted non-directional lighting for 36" through 72" pipe are not
	acceptable.
Camera	• The mounting surface for the joystick, switches, and LED shall be angled for ease of
Controller	operator use.
	• RS-232 maintenance port shall be provided.
	• The pushbuttons mounted on the controller's panel shall provide the following switch
	positions: Focus: Near and Far, Zoom: In and Out, Iris: Open and Close, Autofocus and
	Lamps, Shutter: Fast and Slow, Pan, Tilt, Focus and Zoom Home, and Diagnostics.
	• Shall include a joystick mounted in the middle of the controller's front panel.
	• The joystick shall have the ability to move the camera head in four directions: up, down,
	left, and right.

ELECTRICAL SPECIFICATIONS and CAMERA REQUIREMENTS

Video Output	•	Multi-Conductor Version: 1 V, S/N 46dB or greater					
	•	Single-Conductor Version: FM modulated 9.8mHz to 11.3mHz.					
Integrated Lights	•	4 x 12W xenon lamps					
	•	Power consumption: 48W max 12V					
	•	Illumination: 80 mscp (1000 lumens)					
	•	Lamp life: 200 hours					
	•	Color temp: 3000°K					

IFB NO. <u>1419</u> Page 32 of 51

D NO. <u>1419</u>	Fage 32 01 31
Image Pick-up Device	• Interline transfer 1/4 inch CCD color
Picture Elements (pixels)	• Solid state ¹ / ₄ " diagonal pixels: 768 (H) x 494 (V) = 379,392 elements (NTSC)
Lens	• 10x Zoom f=4.2mm to 42mm (F1.8 to F2.9)
	• 4x (40x with optical zoom)
Digital Zoom	
	• 56° diagonal, 46° (H) wide, 4.6° (H) tele end
Field of View	30 diagonal, 40 (11) wide, 4.0 (11) tele end
Resolution Lines	• 470 TV lines horizontal
Electronic Shutter	• ¹ / ₄ s to 1/10,000 s, 20 steps
Minimum Illumination	• 3 lux @ F/1.4
	• Single-Conductor Version: 64V to 160V
Input Camera Voltage	Single Conductor Version. 617 to 1007
T	Multi-Conductor Version: 20-72V from controller
	• Axial Rotation: 360°
Head Rotation	
	• Rotation Optical Viewing Angle: 400°
	• Lateral Pan: 285°
	• Pan Viewing Angle Range: 331°
	• Operate in a 6" Relined Pipe
	• Rotational Diameter: 4½"
	Humidity sensor, CCD temperature, camera voltage, light head voltage, serial
Internal Diagnostics	number identification, and operating hour meter. Cameras without the
	aforementioned diagnostics will be deemed unacceptable.
	• 50 PSI (minimum)
Working Pressure	
	• 0° to 50°C
Operating Temperature	
	Multi-conductor Version: 1208 Mainline PCU and Inspector General portable
Compatible PCU's	
	Single-Conductor Version: SC-2000 CCU
Compatible Cables	Multi-Conductor Version: Up to 4000'
	• Single-Conductor Version: Up to 2000'
Dimensions	 Overall length: 17.7", Head length: 6.6", Body tube diameter: 3", Head rotatio
	diameter, 4 ½"
Weight	• TBD
	<u>l</u>

SELF-PROPELLED CAMERA TRANSPORTER

The unit shall be labeled and listed as a minimum by a Nationally Recognized Testing Laboratory (NRTL) to the applicable Standard for Safety for Closed Circuit Television Equipment, UL 2044, 2nd edition, 11/9/01. A listing report

IFB NO. <u>1419</u> Page 33 of 51

must be supplied that certifies the aforementioned equipment is acceptable as defined by 29 CFR 1910.399 and required by 29 CFR 1910.303(a). Self-certification or certification by a laboratory that is not an NRTL will be deemed unacceptable. NRTL labeled and listed equipment shall be supplied as required by the FEDOSHA memorandum, dated September 25, 2002, page 3, Section on Compliance, prepared by John L Henshaw, Assistant Secretary of Occupational Safety and Health.

A self-propelled camera transporter shall be provided for inspecting pipelines ranging from 6" to 30" in diameter. The transporter assembly shall be designed with the ability to automatically position the camera and lighting system to the centerline of the pipe being inspected while providing protection from offsets and in-line obstructions.

Transporter	 Shall include the following (minimum) equipment: Weighted Track Width Adjustment Bars, Transporter Controller, and Spare Parts Kit. Shall be equipped with a dual fastened, rubber cleat, and power track drive system designed to maximize traction in each pipe size. Shall be equipped with self-propelled power forward, power reverse, and free wheel capabilities. Shall have full, variable speed in power forward or power reverse modes. Shall be capable of inspecting pipes 6" to 30" in diameter (<i>See Weighted Track Width Adjustment Bars below</i>). Shall have speed and direction controlled from the hand-held controller. Shall have speed and direction controlled from the control console. Shall include self-cleaning, agricultural type, steel sprockets to prevent chain binding. Shall include a heavy-duty drive motor specifically designed to meet the power requirements of the system, regardless of size of pipe being inspected. Shall be retrievable in the free wheel mode by the video cable reel to reduce the normal wear on the drive motor and drive train by 50%. Shall include a kit containing additional chain links. The transporter, when used with the pan and tilt optical zoom camera, shall fit into a 6" diameter relined pipe and will have the ability to operate in 6" or 8" diameter pipe with offsets. <i>All transporter / optical zoom camera combinations that are unable to operate in 6" diameter pipe will be deemed unacceptable</i>. The combined length of the transporter / optical zoom camera assembly shall not exceed 28" with the camera in the home position to allow the inspection and traversal of 6" diameter pipe. <i>Optical Zoom Camera / transporter assemblies exceeding 28</i>" 										
Transporter Controller	 in length will be deemed unacceptable Transporter shall be controlled via the hand-held controller from the Inspector General PCU. Shall include the following indications and controls: Power Output, "ON / OFF" Control, Volt & Amp Display on Controller and PCU, Directional Control, and Speed Control with Automatic Off. 										
Weighted Track Width Adjustment Bars	 To position the camera and lighting system to the centerline of the pipe being inspected, various types and quantities of shaft extenders & pipe adapters shall be provided for 6" to 30" pipe sizes. Transporter weights shall increase for each pipe size as follows: 										
	Pipe Size (Inches)	6"	8"	10"	12"	15"	18"	24"	30"		
	Weight w/Camera (Lbs)	40	42	46	50	52	64	76	89		
	Weight w/o Camera (Lbs)	26	28	32	36	38	50	62	75		

IFB NO. <u>1419</u> Page 34 of 51

Powered reverse only transporters, which have the potential of running over the cable termination during retrieval operation, thus requiring the operator to coordinate the speed of the transporter with the speed of the video cable reel, shall be deemed unacceptable. However, powered reverse shall be supplied to facilitate precise inspections and backing out of dropped manholes.

- 4.2 Keys and Manuals: Vehicle shall be provided with two (2) sets of keys, one (1) owner/operators manual.
- 4.3 <u>Pickup and Preparation:</u> The unit will be inspected and picked up by York County personnel. Unit to include a current Virginia State Inspection and serviced by vendor prior to pickup. Vehicle shall be accompanied with one (1) copy of the original Manufacturers Statement of Origin (MSO) and 30 day temporary license plates.
- 4.4 <u>Warranty:</u> Vehicle shall be covered by 3 year/36,000 mile bumper to bumper warranty with documentation provided at delivery for a delayed warranty start period. Warranty period shall commence only when vehicle is actually placed into service by the County and after chassis modifications have been completed. Warranty starting period shall be evidenced by County's records rather than commencing at delivery.

END OF SPECIFICATIONS

5.0 SPECIAL CONDITIONS:

- 5.1 Contractor must provide Five (5) Days of Training at the York County Environmental and Development Services Building, 105 Service Drive, Yorktown, Virginia.
- 5.2 Air Fare and Accommodations for three (3) County Employees, Two (2) nights.
- 5.3 For Technical questions contact Daryl Ballard, Operations Supervisor at (757) 890-3895 or e-mail address: ballardd@yorkcounty.gov.
- 5.4 Bidders must supply a minimum of five (5) references with exact aforementioned equipment without substitutions. This equipment must be in production and in service for a minimum of one (1) year or the equipment will be deemed unacceptable.

6.0 GENERAL TERMS AND CONDITIONS

6.1 MANDATORY USE OF FORM:

All responses to an Invitation for Bid (IFB) must be submitted on and in accordance with this form. If more space is required to furnish a description of the good and/or services offered or delivery terms, Bidder may attach a letter hereto which will be made a part of the bid. All bids must be submitted in a sealed envelope plainly marked with the IFB number, date and time of bid opening.

6.2 OPENING DATE/TIME:

Bids and amendments thereto, or withdrawal of bids submitted, if received by Owner after the date and time specified for the scheduled bid opening, will not be considered. It will be the responsibility of Bidder to see that its bid is in the Purchasing office by the specified time and

IFB NO. <u>1419</u> Page 35 of 51

date. There will be no exceptions. Date of postmark will not be considered. Phone or telegraphic bids (including FAX) will not be accepted.

6.3 <u>INCONSISTENCIES IN CONDITIONS:</u>

In the event there are inconsistencies between the General Terms and Conditions and the Special Terms and Conditions, if any, and/or other schedules contained herein, the latter two shall take precedence.

6.4 CLARIFICATION OF TERMS:

Questions about the specifications or other solicitation documents, should be directed to the buyer whose name appears on the face of this solicitation. Any revisions to the solicitation will be made only by written addendum issued by the Owner.

6.5 TESTING/INSPECTION:

Owner reserves the right to conduct any test or inspection it may deem advisable to ensure that goods and services conform to the specifications.

6.6 INVOICES:

Invoices for goods or services ordered, delivered and accepted shall be submitted directly to the 'INVOICE TO:' address shown on the purchase order or contract. All invoices shall show the Contract number and/or purchase order number. Any payment terms requiring payment in less than thirty (30) days will be regarded as requiring payment thirty (30) days after invoice or delivery, whichever occurs last. However, this shall not affect offers or discounts for payment in less than thirty (30) days.

6.7 DEFAULT:

In the event of a default by Contractor, the Owner reserves the right to procure the goods and/or services from other sources, and hold the Contractor liable for any excess cost occasioned thereby. If, however, public necessity requires the use of materials or supplies not conforming to the specifications, they may be accepted and payment therefore shall be made at a proper reduction in price.

6.8 ETHICS IN PUBLIC CONTRACTING:

By submitting its bid, all Bidders certify that its bid is made without collusion or fraud and that it has not offered or received any kickbacks or inducements from any other bidder, supplier, manufacturer or subcontractor in connection with its bid, and that it has not conferred on any public employee having official responsibility for this procurement any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised unless consideration of substantially equal or greater value was exchanged.

6.9 ANTI-DISCRIMINATION:

By submitting its bids or proposals, Bidder certifies to the Owner that it will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Act of 1975, as amended, and Section 2.2-4311 of the Virginia Public Procurement Act which provides:

IFB NO. <u>1419</u> Page 36 of 51

In every contract over \$10,000, the provisions of a. and b. below apply:

a. During the performance of this Contract, the Contractor agrees as follows:

The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

Contractor, in all solicitations for advertisements for employees placed in behalf of Contractor, will state that Contractor is an equal opportunity employer.

Notices, advertisements and solicitations placed in accordance with Federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

- b. Contractor will include the provisions of a. above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
- c. In accordance with §2.2-4343.1 of the Code of Virginia, et. seq., the Owner shall not (i) discriminate against a faith-based organization as defined in Code of Virginia section 2.2-4343.1(B) on the basis of the organization's religious character or (ii) impose conditions that (a) restrict the religious character of the faith-based organization, except as provided in subsection F of section 2.2-4343.1 the Code of Virginia, or (b) impair, diminish, or discourage the exercise of religious freedom by the recipients of such goods, services, or disbursements.

6.10 IMMIGRATION REFORM AND CONTROL ACT OF 1986:

Bidder certifies that it does not and will not during the performance of the Contract, violate the provisions of the Federal Immigration Reform and Control Act of 1986, which prohibits employment of illegal aliens.

6.11 INDEMNITY AGREEMENT:

The following shall be deemed incorporated into any contract awarded as a consequence of this bid to the same extent as if fully set forth therein:

Contractor and all subcontractors shall bear all loss, expense (including reasonable attorney's fees) and damage in connection with, and shall indemnify Owner against and save Owner harmless from all claims, demands, and judgments made or recovered against Owner because of bodily injuries, including death at any time resulting therefrom, and/or because of damage to

IFB NO. <u>1419</u> Page 37 of 51

property, from any cause whatsoever, arising out of, incidental to, or in connection with the performance of the Contact whether or not due to any act of its or their employees, servants or agents and whether or not due to any act of omission or commission, including negligence, but excluding sole negligence, of Owner, its employees, servants, or agents. Compliance by Contractor with the insurance provisions hereof shall not relieve Contractor from liability under this provision.

Should Contractor, or any of its subcontractors use any of Owner's equipment, tools, employees, or facilities, such will be gratuitous and Contractor shall release Owner from and indemnify and save harmless Owner from and against any claims for personal injuries, including death, arising out of the use of any such equipment, tools, employees, or facilities, whether or not based upon the condition thereof or any alleged negligence of Owner in permitting the use thereof.

7.0 INFORMATION FOR BIDDERS:

- A. Prices should be stated in units of quantity specified, with packing and delivery to destination included; less Federal, State and local taxes.
- B. The time of proposed delivery must be stated in definite terms. If time of delivery for different commodities varies, the bidder shall so state.
- C. Bids must show unit price, amount and grand total. In case of error in the extension of prices, the unit price shall govern.
- D. Unless qualified by the provision "NO SUBSTITUTE", the use of the name of a manufacturer, brand, make or catalog designation in specifying an item does not restrict bidders to the manufacturer, brand, make or catalog designation identification. This is used simply to indicate the character, quality and/or performance equivalence of the commodity desired, but the commodity on which bids are submitted must be of such character, quality and/or performance equivalence that it will serve the purpose for which it is to be used equally as well as that specified. In submitting bids on a commodity other than as specified, bidder shall furnish complete data and identification with respect to the alternate commodity he proposes to furnish.

Consideration will be given to bids submitted on alternate commodities to the extent that such action is deemed to serve best the interests of the Owner. If the Bidder does not indicate that the commodity he proposes to furnish is other than specified, it will be construed to mean that the Bidder proposes to furnish the exact commodity described.

E. Award will be made to the lowest responsible and responsive bidder. The quality of the articles to be supplied their conformity with the specifications, their suitability to the requirements of the Owner, and the delivery terms will be taken into consideration in making the award.

IFB NO. <u>1419</u> Page 38 of 51

F. The Owner reserves the right to award by item, groups of items or total bid; to reject any and all bids in whole or in part, and to waive any informality or technical defects if, in its judgment, the best interests of the Owner will be served.

- G. Cash discounts may be offered by bidder for prompt payment of bills. Such discount will not be taken into consideration in determining the low bidder but will be taken into consideration in awarding tie bids. The discount period will be computed from the date delivery is accepted at destination or from date correct invoice is received by the consignee, whichever is the later date.
- H. Acceptance of a bid by the Owner is not an order to ship.
- I. Each bid is received with the understanding that the acceptance in writing by the Owner of the offer to furnish any or all of the commodities and/or services described therein, shall constitute a contract between the bidder and the Owner, which shall bind the bidder on his part to furnish and deliver the articles quoted on at the prices stated and in accordance with the conditions of said accepted bid; and the Owner on its part to order from such bidder, except for causes beyond reasonable control; and to pay for, at the agreed prices, all articles specified and delivered.
- J. Any equipment delivered must be standard new equipment latest model, except as otherwise specifically stated in bid. Where any part or nominal appurtenances of equipment is not described, it shall be understood that all the equipment and appurtenances which are usually provided in the manufacturer's stock model shall be furnished.
- K. The Contractor guarantees to save the Owner, its agents or employees, harmless from liability of any nature or kind, for use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, articles or appliances furnished or used in the performance of the contract, or which the contractor is not the patentee, assignee or licensee. This clause shall be deemed to be incorporated into any contract awarded as a consequence of this bid.
- L. All prices and notations must be in ink or typewritten. No erasures permitted. Mistakes may be crossed out and corrections made in ink adjacent and must be initialed and dated in ink by person signing quotations.
- M. All bids must be signed with the firm name and be signed by an officer or authorized employee of the firm. In the case of a corporation, the title of the officer signing must be stated and each officer must be duly authorized. In the case of a partnership, the signature of at least one of the partners must follow the firm name using the term "member of the firm" or "general partner". In the case of a limited liability company, the signature shall be by a member, or by a manager if any.

IFB NO. <u>1419</u> Page 39 of 51

N. Verify your bid before submission as they cannot be withdrawn or corrected after being opened. Unless otherwise specified herein, bidder agrees to hold the price(s) for sixty (60) calendar days from bid opening date.

- O. If you do not bid, return this sheet and state reason. Otherwise your name may be removed from our mailing list.
- P. Length of time for delivery as well as price may be considered in awarding of bid.

8.0 <u>INSURANCE</u>: (Revised 10/92)

The contractor shall carry insurance in the amount specified below, including the Contractual Liability assumed by the contractor and shall deliver certificates of insurance from carriers acceptable to the owner specifying such limits, along with a proper endorsement naming the "County of York, its Officers, Agents and Employees" as Additional Insured on a primary basis (Form No. GL-20-10) on applicable policy(s). The provisions of this paragraph shall be deemed include included in the contract as if fully set out therein.

Worker's Compensation and Employer's Liability

Coverage A - Statutory Requirement

Coverage B - \$100,000; \$100,000; \$500,000

Comprehensive Automobile Liability, including Owned, Non-Owned

Hired Car Coverage.

Limits of Liability - \$500,000 Per Occurrence Bodily Injury or Property Damage.

Commercial General Liability

Limits of Liability - \$500,000 Per Occurrence Bodily Injury or Property Damage.

Contractual Liability includes the Contractual liability assumed hereunder.

Completed Operations Insurance, to remain in full effect until the date of acceptance of the project by the Owner.

9.0 <u>AWARD AND EXE</u>CUTION OF CONTRACT:

Award of Contract:

The contract will be awarded or the bids rejected as soon as reasonably possible, but not later than sixty (60) days after the date of opening bids, unless the period for acceptance is otherwise extended at request of Owner and agreed to in writing by the bidder, or bidders.

9.1 Form of Contract:

An example of the proposed contract format is enclosed. Both parties shall execute this contract prior to approval by the County Attorney.

Copies of the Payment and Performance Bonds are also attached.

IFB NO. <u>1419</u> Page 40 of 51

9.2 Entering Contract:

Upon award of the Contract to a bidder, such bidder shall enter into the Contract by signing the Contract and by furnishing the Bond(s) for faithful performance as prescribed herein and the Certificate of Insurance as prescribed, which are required to be procured by the Contractor within ten (10) calendar days after the date of the award or within such further time as the owner may allow. All documents referred to are attached hereto.

No contract shall result from the submission of any bid and no liability shall accrue with respect thereto until a written contract and accompanying documents have been fully and completely executed on the part of the successful bidder and the Owner. However, failure by the successful bidder to enter into a written contract shall cause the successful bidder to forfeit the full amount of the bid guarantee to the Owner.

9.3 Execution of Documents:

All documents which the bidder is required to execute shall carry the signature of the president of the corporation, the corporate seal and shall be attested by the secretary of the corporation provided, however, if the board of directors of a corporation authorizes another officer to act for the corporation, then a sealed and attested copy of such authorization shall accompany the signature of such other officer. In the case of an individual, the individual to be bound shall sign; and in the case of a partnership, the signature of a partner shall bind the partnership; and in the event of a limited liability company, a member (or the manager, if any) shall sign.

9.4 Subcontracts:

Before making any subcontract, the Contractor must submit a written statement to the Owner, giving the name and address of the proposed subcontractor, the portion of the work and materials which he is to perform and furnish and a statement in writing from such subcontractor that he waives all rights to assert any claims, actual and/or consequential against the Owner allegedly arising from or growing out of any delays in the work schedule or any failure of the Contractor to pay such subcontractor any sums owed by the Contractor to such subcontractor.

If the Owner finds that the proposed subcontractor is qualified, he will so advise the Contractor in writing. The Owner may revoke approval of any subcontractor only for good cause. Notice of such revocation of approval will be given in writing to the Contractor by the Owner. If the Owner determines for good cause that a subcontractor is not qualified, Owner shall so notify Contractor, and Contractor shall not thereafter enter into any subcontract with the subcontractor in connection with the contract.

9.5 Separate Contracts:

The Owner reserves the right to let other contracts in connection with the project, the work under which will proceed simultaneously with the execution of this Contract. The Contractor shall afford other separate contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work and the Contractor shall take all reasonable action to coordinate his work with theirs. If the work performed by the separate contractor is defective or so performed as to prevent the General Contractor from carrying out his work according to the plans and specifications, the Contractor shall immediately notify the Owner upon

IFB NO. <u>1419</u> Page 41 of 51

discovering such conditions. Upon receiving notification, the Owner shall take such appropriate steps as are necessary to allow the Contractor to carry out his work under this Contract, and appropriate extensions of time and change orders shall be given to the Contractor for any delays and extra costs caused by the separate contractor's failure of proper performance.

10.0 AWARD:

Owner will make the award to the lowest responsive and responsible bidder. Due consideration will be given to price, previous experience, and the ability of the bidder to render required services. Owner reserves the right to conduct any test it may deem advisable and to make all evaluations. Owner also reserves the right to reject any or all bids, in whole or in part, to waive informalities and to delete items prior to making the award, whenever it is deemed in the sole opinion of the Owner to be in its best interest.

11.0 BID SECURITY:

Bids shall be accompanied by a bid guarantee of not less than Five Percent (5%) of the bid, which may be a Bid Bond, a Certified Check, or Cashier's Check, made payable to Treasurer, County of York, Virginia. Such Bid Bond or check shall be submitted with the understanding that it shall guarantee that the Bidder will not withdraw his bid for a period of sixty (60) days; and, that if his bid is accepted, he will enter into a formal contract with the Owner, and the required bond will be given.

12.0 SURETY:

The Contractor shall furnish Surety Bonds, in the forms provided herein, each in an amount equal to One Hundred Percent (100%) of the contract as security for the faithful performance of this contract and for the payment of persons performing labor on the project under this agreement. The Performance Bond shall also require the Contractor to make good, at his own expense, work due to imperfect materials and workmanship for a period of one year after final acceptance by the Owner. The surety on both bonds shall be a duly authorized Surety Company or Companies satisfactory to the Owner.

IFB NO. <u>1419</u> Page 42 of 51

13.0	<u>PRICING SCHEDULE</u> : The bidder to provide a 2005 Chevrolet CC5500 in compliance with the specifications, terms and conditions herein, as follows:
13.1	One (1) TV Sewer Van, CC5500 Chevrolet Specify Mfg & Model:
	Price: \$
	Delivery Calendar Days ARO
	Literature Describing Unit is attached: YES NO
	Literature Describing Warranty is attached: YES NO
	Warranty:
	Terms: Net

IFB NO. <u>1419</u> Page 43 of 51

14.0	CONTRACTOR DATA:

If you have not done business with the County of York, please complete the following:

<u>Years in Business:</u> Indicate the length of time you have been in business providing this type of service: ___years ___months.

<u>References:</u> Indicate below a listing of at least five (5) recent references for whom you have provided this type of service/equipment. This equipment must be in production and in service for a minimum of one year or the equipment will be deemed unacceptable. Include the date service was furnished and the name and address of the person we have your permission to contact.

CLIENT DATE ADDRESS PERSON TO CONTACT
AND PHONE NUMBER

IFB NO. <u>1419</u> Page 44 of 51

CONTRACT FORM CONSTRUCTION CONTRACT

Agreement No.	

This AGREEMENT, dated this day of, 200, by and between YORK COUNTY, VIRGINIA (a political subdivision of the Commonwealth of Virginia); hereinafter called the Owner; and (a corporation organized and existing under the laws of the Commonwealth or
Virginia); hereinafter called the Contractor.
WITNESSETH: The Owner and Contractor, for the consideration stated herein, agree as follows:
Scope of Work:
The Contractor shall perform all required work and shall provide and furnish all labor, materials, necessary tools, expendable equipment and utility and transportation service and all else required to complete the fabrication of:
Sewer TV Inspection Van, 2005 Model CC5500 PER IFB1419 dated
all in strict accordance with the Specifications, including any and all Addenda, and in strict compliance with the Contract Documents hereinafter enumerated.
It is understood and agreed that said labor, materials, tools, equipment and service shall be furnished and said work performed and completed under the direction and supervision of the Contractor and subject to the approval of the Owner or its authorized representative.
Guarantee:

All materials and equipment, furnished by the Contractor, and all construction involved in this Contract shall be and the same are hereby guaranteed by the Contractor free from defects owing to faulty materials or workmanship for a period of one year after date of substantial completion of the work. All work which proves defective, by reason of faulty material or workmanship within said period of one year, shall be replaced by the Contractor free of cost to the Owner. Nothing herein shall be deemed as a IFB#1419.doc/txtlou http://www.yorkcounty.gov/purchasing

IFB NO. 1419 Page 45 of 51

waiver of any other available remedy for contract default, or as the waiver of any applicable statutory limitations period for actions for contract default.

THE BID SCHEDULE OF THE SUCCESSFUL BIDDER

SHALL BE CONFORMED AND INSERTED HEREIN

TO BECOME A PART OF THE COMPLETED CONTRACT DOCUMENTS

Contract 1	Price:
------------	--------

IFB#1419.doc/txtlou

The Owner shall pay the Contractor as just compensation for the performance of this Contract, subject to any additions or deductions as provided in the Contract Documents, the unit and lump sum price as contained in the Bid Schedule attached hereto.
The Contract Amount is
(\$) based upon unit and lump sum prices extended as herein contained.
Payments:
The Owner will pay to the Contractor, in the manner and at such times as set forth in the General Conditions, such amount as required by Paragraph 6.6 of the IFB.
<u>Time:</u>
The undersigned Contractor agrees to commence work within (10) calendar days after the date of Notice to Proceed and further agrees to complete the Contract Work within the following specified time limits:
A DELIVERY DATE OF 120 CALENDAR DAYS FROM DATE OF NOTICE TO PROCEED
THIS AGREEMENT SHALL BE BINDING UPON ALL PARTIES HERETO AND THEIR RESPECTIVE HEIRS, EXECUTORS, ADMINISTRATORS, SUCCESSORS, AND ASSIGNS.
Component Parts of the Contract:
This Contract consists of the following component parts, all of which are hereby made a part hereof as if herein set out in full:
 Advertisement for Bids, dated Request for Bids Invitation for Bids (IFB) No. 1419 dated plus any and all addenda thereto Bid Bond

http://www.yorkcounty.gov/purchasing

- 5. General Conditions
- 6. Payment Bond
- 7. Certificate of Insurance
- 8. Notice of Award
- 9. Notice to Proceed
- 10. Change Orders (if any)
- 11. Other Documents as may be required by law or appended hereto
- 12. Specifications as set forth in the Invitation for Bids
- 13. Warranty

ADDENDA:		
No	, dated	, 200_

No. _____, dated _____, 200_

IFB NO. <u>1419</u> Page 47 of 51

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the day and year first above written in $(\underline{4})$ counter parts each of which shall for all purposes be deemed an original.

ATTEST:	
NAME	OWNER
TITLE	BY
	COUNTY ADMINISTRATOR TITLE
ATTEST:	
NAME	CONTRACTOR
TITLE	BY
	TITLE
CONTRACTOR'S ADDRESS:	
CONTRACTOR'S FEDERAL I. D. NO.	APPROVED AS TO FORM:
	COUNTY ATTORNEY

RESERVED FOR CERTIFICATE OF INSURANCE, AND ADDITIONAL INSURED FORM GL-20-10 OR OTHER SATISFACTORY EVIDENCE OF REQUIRED COVERAGE

CONTRACT FORM PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that	
(Name of Contractor)	
a, hereinafter call the Principal, (Corporation, Partnership or Individual)	
and	
(Name of Surety)	
(Address of Surety)	
hereinafter called Surety, are held and firmly bound unto	
County of York, Virginia (Name of Owner)	
P. O. Box 532, Yorktown, Virginia 23690 (Address of Owner)	
hereinafter called Owner, in the penal sum of	
Dollars, (\$), in lawful money of the United States, for the payment of which sum made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.	
THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain Contract with the Owner, dated the _day of, 200_, a copy of whice and made a part hereof for the fabrication of:	h is hereto attached
TV Sewer Inspection Van 2005 Model CC5500 PER IFB 1419 dated	

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing material for or performing labor in the prosecution of the work provided for in such Contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment, tools, consumed or used in connection with the construction of such Work, and all insurance premiums on said Work, and for all labor, performed in

IFB NO. <u>1419</u> Page 49 of 51

such Work whether by Subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to Work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or the Specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

ATTEST:		
ATTEST:		
(PRINCIPAL) SECRETARY	PRINCIPAL	
	BY	
SEAL		
WITNESS TO PRINCIPAL	ADDRESS	
ADDRESS		
ATTEST:		
(SURETY) SECRETARY	SURETY	
	BY_	IEY-IN-FACT)
SEAL	(ATTORN	IEY-IN-FACT)
WITNESS AS TO SURETY	ADDRESS	

IFB#1419.doc/txtlou

Partnership, all partners should execute Bond.

http://www.yorkcounty.gov/purchasing

IFB NO. <u>1419</u> Page 50 of 51

CONTRACT FORM PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that	
(Name of Contractor)	-
a, hereinafter call the Principal, (Corporation, Partnership or Individual)	-
(Name of Surety)	
(Address of Surety)	-
hereinafter called Surety, are held and firmly bound unto	
(Name of Owner)	-
(Address of Owner)	-
hereinafter called Owner, in the penal sum of	
Dollars, (\$), in lawful money of the United States, for the payment of which sumade, we bind ourselves, successors, and assigns, jointly and severally, firmly by these	
THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered with the Owner, dated the day of , 200_, a copy of which is hereto attached and r the fabrication of:	
TV Sewer Inspection Van 2005 Model CC5500 PER IFB 1419 dated	

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said Contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety and during the one year guarantee period, and if he shall satisfy all claims and demands incurred under such Contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

IFB NO. <u>1419</u> Page 51 of 51

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to Work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or the Specifications.

PROVIDED, FURTHER, that no default settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

TTEST:	
(PRINCIPAL) SECRETARY	PRINCIPAL
EAL	BY
WITNESS TO PRINCIPAL	ADDRESS
ADDRESS	
ATTEST:	
SURETY) SECRETARY	SURETY
SEAL	BY(ATTORNEY-IN-FACT)
WITNESS AS TO SURETY	ADDRESS
ADDRESS	

IFB#1419.doc/txtlou

Bond.